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A

WEEKLY REVIEW OF MEDICINE.

EDITED BY
FRANK P. FOSTER, M. D.

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Lectures and Addresses.

THE MEDICAL PROFESSION
AT THE CLOSE OF THE NINETEENTH CENTURY.

AN ADDRESS DELIVERED BEFORE
THE NEW YORK STATE MEDICAL ASSOCIATION
AT ITS THIRTEENTH ANNUAL MEETING,
October 14, 1896.

By CHARLES PHELPS, M. D.,
NEW YORK COUNTY,
NOW PRESIDENT OF THE ASSOCIATION.

It has come to be the custom in the medical profession on formal occasion to rehearse its later triumphs, to glorify its present as an Augustan age, and to foresee its future in brilliant lights, through which are cast no shadows of distrust. It is a custom rightly honored in the observance. The science and art of medicine hold a position of honor and consideration, dependent upon extraordinary advances on both medical and surgical lines, which is unparalleled in their history. We may well felicitate ourselves that as a profession we have not lagged behind in the revival of intellectual activity which distinguishes the present era in science. It is proper that we should celebrate with pomp of words the splendid achievements of our immediate predecessors and of our contemporaries; it is pardonable if our exultation has been sometimes voiced in too magniloquent and resounding phrases, and not always tempered by a generous remembrance of the struggles and successes of a remoter time.

Reflection naturally succeeds to exultation. After a decade of mutual congratulations, the time is fitting for a consideration of the forces, both extraneous and inherent, which have conspired to enhance the usefulness and renown of the medical calling, and for an estimation of the several and diverse tendencies toward good and evil which dominate it now, and which, unchecked, are destined to shape its future.

The present supposed *renaissance* of medical art is but a somewhat sudden increase in the energy of an irregular but ceaseless development. Its waves of progress, which have never stayed and have gathered unnoted strength, have simply chanced to break upon the shores of our time with unwonted force. It may be uncertain whether surgery was prehistorically progressive, or whether within the limits of tradition from century to century its advances have been always manifest or without recession. It is unimportant to the present consideration of medical or surgical art to disentangle its history from early fable and mythological romance to determine to what extent it existed in an epoch of barbarism, or in a subsequent era of mediæval superstition, or even to define the period in which it may be deemed to have acquired a scientific basis. From the seventeenth century, at least, the inclusion of medicine in the field of positive if not exact science is beyond question, and its continued advancement a matter of record. The successive discoveries of the circulation of the blood, of the efficacy of vaccination, and of the possible annihilation of pain by anæsthesia are imposing landmarks along the path which has been traversed; and all through this time the gradual evolution of a rational system of treatment of disease and the progressive improvement of methods of surgical interference are sufficient evidence that the advance has been fairly uninterrupted. The recent detection of pathogenic germs, the heretofore invisible host which barred the way to surgeon and physician alike, was but one of the great victories in the war which for a century and more has been persistently waged against the invasion and progress of disease. It has been followed by an extraordinary amount of fruitful research, widely distributed, both in this country and abroad, and the influence which it has exerted in the study of pathology and in the practice of therapeutics has not been paralleled by that of any previous discovery in the domain of medical science.

This energetic cultivation of a special scientific field, and the affluence of its results, are not to be regarded as isolated phenomena apart from the general trend of thought and intellectual activity in these later years of the nineteenth century. The age in which we live is eminently practical, and attention has been engrossed in studies of science as distinguished from letters, science as applied to the discovery of such facts as have a definite material value.

The appreciation of intellectual culture, either as an end sufficient in itself, or as a means to the better accomplishment of ultimate results, has been lessened; its necessity as a foundation for technical acquirement is scarcely recognized or inculcated. In American colleges and universities, even of the higher grade, the extent of classical and rhetorical study demanded has been more and more circumscribed, until undergraduates are now practically permitted to pursue such exclusive lines of work as in their unguided opinion pertain directly to their future occupation in life. The surrounding conditions of mental action, and perhaps the contemporaneous mental constitution, incite to scientific investigation rather than to endeavor in the higher planes of literature.

It follows that the arts most sedulously wrought and successfully developed have been mechanical, industrial, or, in some sort, utilitarian rather than æsthetic. The gentler arts of oratory and poesy, and of letters, have not only failed of advancement, but have suffered decadence. The distinguished orator of to-day makes merry with postprandial jest. The voices which come from the tribune, the forum, or the pulpit have lost in resonance and sweetness; and the persuasive charm, the impassioned and resistless force of eloquence which beguiled or compelled the minds of men, exists only in memory, or is but faintly shadowed in a printed page. The poetry of Bryant and Longfellow belongs to a rapidly receding past. In the general field of letters, an epoch which is impressed with the genius of Irving and Curtis, which recalls the delicacy and refinement of the period of Addison and Steele, has been definitely closed with the death of Holmes.

It is not to be assumed that the altars of the Muses are deserted, or that they who stand outside the temple gates are ignorant or of indifferent mind. Popular intelligence is more acute, and popular education broader than ever before; journalism is clever; literary work of higher or more pretentious character is respectable; and the best of literary production, of whatsoever value it may be, does not lack popular appreciation. At the same time, the urgent demand is for tangible results in the betterment of the physical conditions of existence, and in no other direction has the outcome of intellectual force been so conspicuously great. The absolute present, no less than the immediate future, is still pregnant with marvels of mechanism to be derived from the further study and application of the laws of physical science. The impossibilities of yesterday and the improbabilities of to-day are the assured certainties of to-morrow. No limit has yet been fixed to the applications of electricity, steam, or chemical forces in the practical prolongation of life through the annihilation of time and space; no engineering problem has yet been found incapable of solution; no anticipation of mechanical progress, fairly formed, however extravagant, has failed of realization. In every phase, life has been increased in value by more thoroughly satisfying its necessities, diminishing its pains, and increasing its pleasures.

It is not only natural, but inevitable, in an age characteristically occupied with the improvement of physical conditions, that the art most directly concerned with the integrity and prolongation of life, without which all other material advantage is naught, should command great attention, make great progress, and receive great honor. This art was at one time pursued as was the art of war. Then, as now, great care was taken to learn the dispositions of the enemy; but afterward the campaign was planned and battle given under widely diverse conditions. Strategy in war was brilliant, daring, but of necessity much was left to the arbitrament of fortune. In time of action, arms and ammunition were of uncertain range, and their execution more uncertain still; and in the end, victory was often gained by some inspiration of genius or by some happy chance. In surgery, diagnosis was often made in the absence of positive data with an accuracy which was marvelous, and by an exercise of the highest mental powers, which seemed like intuition. Operations were boldly conceived, and the genius of the surgeon often turned the scale when danger threatened; but in practice, medication was profuse and empirical, instruments were often illy adapted to their purpose, and the pyogenic germ was an unknown and unsuspected enemy always ready to fall upon a point exposed. From first to last, chance was necessarily a potential factor.

In both war and surgery chance and genius have come to play a smaller part. In modern military art, each element of a complex organization, every detail of formation, movement, or maintenance, is rigorously perfected, the destructive power of arms and ordnance is accurately determined, the value of position exactly appreciated, and the issue of battle predicated with almost mathematical precision. In the field of surgery, diagnosis, prognosis, and treatment are now founded upon an equally complete mastery of all the elements of a case, derived from a minute knowledge of pathology and a critical and laborious observation of clinical phenomena. If surgical science is not yet exact, and the results of surgical practice are still far from certain, it is in part because the study of elemental facts is incomplete. Another reason exists in the various manifestations of nervous and psychic conditions which are essentially incapable of formulation. The impossibility of predicating the degree of shock which will result from the operative destruction of a given amount of tissue, or of determining the extent of lesion from the severity of a chill, or of solving many similar problems, is probably absolute; but there are lines of study which still promise practical results, and which are still unexplored or not yet followed to the end. The present status of surgery, as well as of medicine, is to be ascribed to the careful observation and exhaustive investigation of details, and to a certain extent to a consequent subdivision of labor. Its immediate advances must depend upon a persistence in the same methods. The general acceptance of this proposition determines the most important tendency of both medical and surgical work.

The existing inclination of the professional mind toward methodical observation and the study of rudimental facts has been impressed with certain characteristics which equally reflect the spirit of the age. It is directed not only to scientific induction, but largely to the accomplishment of immediately practical results, and it is generally diffused through the body of the profession, within the limits of individual capacity and opportunity. The discovery of micro-organisms and of ptomaines and leucomaines is hardly recent, but the recognition of their real nature and of their pathic relations is almost within the present generation. The work of bacteriologists since the identification of the anthrax bacillus by Davaine and Pasteur, scarcely more than twenty-five years ago, has been largely devoted to establishing the dependence of various diseases upon the action of specific bacteria and to attempts to evolve means of cure by specific methods. These efforts have met with more or less success, but even when the result has been problematical they have equally enchained popular attention and stimulated professional labor. It may be still a question whether Koch or Edson has formulated a cure for tuberculosis or Pasteur for rabies, or whether the treatment suggested by Behring and perfected by Roux will prove effectual in cases of diphtheria, but there can be no doubt that the work of these distinguished pathologists is illustrative of the practical nature of investigations which are in progress at the present time.

The original discovery of the existence of bacteria and of the animal alkaloids, the gradual determination of their true character, the coincident study of organic chemistry in its relation to therapeusis, and the experimentation in physiology, which afforded such brilliant results in the middle of the century, were not less important and demanded no less eminent intellectual capacity. These preliminary steps toward the more exact prevention or control of disease are perhaps entitled to an even higher rank in the scale of intellectual attainment than those which have been lately taken nearer to the goal. They were advances made in a light but feebly reflected from the achievements of the past—the light in which the work of the present must be always done, and which grows always brighter in the lapse of time. The explorers and discoverers of generations so little past, so near in time, yet so far away in the progress of events, must command still profounder admiration for the singleness of purpose with which their successes were attained. They were content to arrive at truth and to follow it so far as they might, but the fruition of their labors was reserved for their successors who were to build upon the foundation which they had laid. Their measure of fame, as fame is reckoned, was not great; the nature of their researches appealed to but a limited number of their colleagues; and beyond the profession they were scarcely known.

It is evident that the present disposition to direct medical and surgical investigation straight to its ultimate object, the cure of disease, while it has grown out of the mental attitude characteristic of the time, has been greatly strengthened by the fact that conditions have been made favorable by work previously accomplished. Physiologists and microscopists, clinicians and pathologists, have so thoroughly established premises that the time has been ripe for conclusions. They have followed convergent lines, which have at last so far merged in one another as to form a broadened course, in which persistence has disclosed the possibilities which we have seen so largely realized. The story of the bacteria, which it has taken nearly two centuries to learn and to which the study of many sciences has been tributary, their history and classification, their life and death, and their pathogenic potentialities, had become well known when contemporary investigators were enabled to write the final chapter, which reveals in these atoms the proximate cause of disease, and in some instances to touch the limit which has been set to human knowledge in this direction by the discovery of specific methods for their cure. The identification of individual diseases with specific micro-organisms still goes on, and efforts to make the poison its own antidote are still unwearied.

The recognition of the pathogenic germ in diphtheria has been but just now succeeded by the discovery of a processs of inoculation which promises the most brilliant curative results. The established dependence of the process of suppuration upon the presence of streptococci has revolutionized surgical practice. In this instance the detection of a pyogenic germ has been followed not only by a logical method of cure, but of absolute prevention. It is probably the most conspicuous achievement of contemporaneous surgery; it has enormously broadened the scope of operative interference, and by diminishing danger has correspondingly increased the applicability of procedures already established. It is typical of present methods of minute and laborious investigation directed to distinctly practical results. It is also strikingly illustrative of the gradual processes by which exact knowledge has been attained, and, incidentally, of the progressive improvements in practice which have often anticipated a comprehension of the facts or principles upon which they were founded.

In days not long gone by, but while pyogenic germs were yet undiscovered, and before aseptic laws had yet been formulated or antiseptic fluids were known, Dr. Marion Sims not only did gynæcological laparotomies, as Kimball and the Atlees had done before him, but urged upon surgeons the practicability and safety of similar operations for abdominal traumatisms, now counted, perhaps, the highest achievement of aseptic surgery. Dr. James R. Wood had even earlier obtained remarkable results by the open treatment of wounds and the strictest attention to cleanliness as it was then understood.

The present system of aseptic surgery has resolved itself into an attempt to reach an ideal condition of cleanliness by the employment of specific agencies. The immense advantage gained by present methods of operation and treatment through bacteriological studies has not been derived from the discovery of new principles, but from the more perfect application permitted of those already established. It was known that stagnant pus caused a local or general poison, and that open wounds and free drainage, thorough ablution and general cleanliness were essential factors in its prevention or cure. There has been added to these, as a result of much labor in bacteriological and chemical investigation, a knowledge of the proximate cause of suppuration, of the necessity of sterilization for prophylaxis, and of the use of chemical germicides in septic conditions.

Careful and laborious investigations, founded upon gradually and progressively acquired knowledge of facts or principles, and tending to directly practical results, are not confined to bacteriology. Closer study of both gross and minute pathology has afforded a basis for more accurate clinical observation. The multiplication of medical journals had further stimulated clinical research. It has enabled a multitude of practitioners of limited experience to record cases which to them seem of great importance, and if the record is sometimes of no great service to the profession directly, it is indirectly of the greatest value through its reflex influence upon the writer. In no other way can men learn their own deficiencies as observers, or establish the habit of minute and precise, yet comprehensive, notation of symptoms, which enables them to profit in the light of experience. The Baconian aphorism applies: "Reading maketh a full man; conference a ready man; and writing an exact man." Publication is like ritualism, perhaps not essential to the end in view, but a necessary stimulus to exertion.

All the agencies which conspire to render diagnosis more exact, increase the precision of treatment—the point at which the science is merged in the art of medicine, the end of all professional striving toward its ultimate object, the prolongation of life. Even a simple mechanical instrumentality, the introduction of the clinical thermometer, has so contributed to the certainty of diagnosis, and in many instances so directly guides the course of treatment, that it may be properly ranked with the most important factors in medical progress.

The progressive improvement in methods employed for the prevention and cure of disease has not only followed in the train of more exact diagnosis, but in certain directions has resulted from the direct fulfillment of clinical indications, independent of their origin. Bacteriological studies have unquestionably transcended in importance all other sources of prophylactic or therapeutic advantage. The discovery of facts which have reduced sanitation and public hygiene to an almost exact science, and of the laws which govern the inception and development of infective diseases, have in themselves alone effected a greater saving of human life than have all other recent advances in medicine combined; but an estimate of the progress of therapeusis would be inadequate which failed to recognize the service which has been rendered in other ways, which are to be accounted minor only by comparison.

The use of the Murphy button and that of Maunsell's method of circular enterorrhaphy, which have added incalculably to the safety of operation, exemplify the application of the nicest mechanical skill to the relief of an obvious difficulty without having been presuggested by other considerations. The synthetic products with absolutely definite therapeutic properties, which are the fruit of research in organic chemistry, and which have greatly contributed to precision in medication, are equally typical of the direct interposition of an allied art, uninspired by ætiological investigation, in the relief of morbid conditions. Such examples could be multiplied to an indefinite extent. If the magnitude of the discoveries which have been made in the study of bacteria and of the animal alkaloids has tended to obscure the importance of, and to lessen interest in, the progress which is being made in other departments of medical science, it is to be remembered that all diseases have not yet been traced to the influence of microorganisms, and that all treatment is not yet to be founded upon the use of germicides.

The position which has been achieved by the medical art in the contemporaneous field of labor is a not more conspicuous fact than its complement, that it has been due to the individual contributions of a vast number of collaborators in all ranks of the profession. There have been, and are still, not only a great number of persons engaged in original investigation in both theoretical and applied science, but in consequence of the very general diffusion of technical knowledge the distinction between leaders and followers, while not entirely lost, has become much less sharply defined; and the professional work which entails the greatest responsibility and confers the greatest honor, which was once reserved to the few, has been brought within the capacity of the larger number, who were a long time content to serve as purveyors to their betters. It is not so many years ago that in a city so large as New York a half score of surgeons were intrusted with practically all the more important surgical procedures. The array of physicians and gynæcologists of corresponding positent to serve as purveyors to their betters. It is not gical societies bear witness to the learning, skill, and capacity of the host of younger men who now maintain a rightful place in the foremost rank of their elders.

The causes of the wider and more general professional activity are not difficult to find. In this, as in the inclination to minute and laborious investigation in the pursuit of facts which may be utilized in the attainment of material advantage, we but reflect a general tendency of society at large. The process of intellectual fermentation characteristic of the time permeates every stratum in every subdivision of the social organization. The nature of the work which in the progress of events has fallen to the lot of the present epoch favors its ample distribution. The qualities of mind which it demands are those which are largely developed in an era of advanced civilization. Patience, industry, perseverance, the faculty of close observation, the power of careful analysis and comparison, the subordination of the imaginative to the logical faculties, are made common in a learned profession by heritage and education, and are adequate to medical inquiry upon its present lines.

It is not a matter of reproach that these qualities give to mediocrity its opportunity. Men of genius have quite too long obscured the modest achievements of their fellows, and have too often hidden the march of men, perchance of somewhat smaller stature. The masters of talent and of hard-earned fruits of science, who control the present, mark the apotheosis of mediocrity; but if the plane upon which they stand be flat as well as broad, so, too, it is uplifted high, and indeed surmounts even the loftiest summits of past achievements which, though left far behind, still seem in delusive mirage to float beyond our reach. No great convulsive movements have disturbed its surface, but its level has risen to constantly greater heights. No other age has witnessed so much accomplished, such great deeds done in the service of humanity by exercise of the homelier faculties of the mind, and without the impress of great personalities upon the body of the time. The extension of medical knowledge and the perfection of medical art may not now demand the force of originality, or the use of the highest forms of intellectual power, but the vast progress made is not less worthy because the field is open.

The conditions of progress are still unchanged. The knowledge gained in the past has not yet been entirely utilized for the purposes of the present, and methods of investigation and of procedure for practical realization of its results, which still obtain, promise to be sufficient for the immediate future. It is possible that eventually new departures may be taken for incursion into the realms of disease, but the branching of the ways is not yet in view.

The ethical side of the profession is less admirable, and less satisfactory as a subject for study. It is not only the methods and purposes of scientific investigation which reflect the characteristics of the age, but no less the manners and the morals of professional men. The age is essentially commercial, and all phases of life assume a corresponding tinge, especially in America, where manners and modes of thought yet remain in an exceedingly impressionable condition. It may be unfortunate or otherwise that the learned professions, especially of medicine and divinity, are ill adapted to the inspirations and methods of business, and wear its garb with little grace. In America the commercial instinct is strongly developed, and the leisure class is not sufficiently large nor far enough removed from its source to exercise a restraining influence. It seems to have infected the medical profession with great virulence. The indispensable condition of business success is to "hustle," and it has been largely adopted as the rule of action in the pursuit of medical practice. It is an ignoble word, and in the vocabulary of a profession of dignity and honor comes to stand for ignoble methods. The word "hustling" is used in business affairs to mean the strain of every effort, every energy of mind and body, tireless activity, fruitful resource, endless pertinacity, and undeviating devotion to the one end in view—the pursuit of gain. In the middle and lower ranks of commerce it has been held by some to signify additionally a struggle in which all self-respect, short of personal dishonesty, might be cast aside; shameless and brazen assurance made to take its place; and publicity given to their trade, in whatever questionable shape, made reputable so long as thrift might follow. In the profession of journalism it has been sometimes thought to justify ruthless attacks upon private honor, remorseless invasion of domestic happiness, or the wanton despoiling of the dead of secrets which no longer concern the living. Among the gentlemen of that sacred calling with whom decorum was once as near to godliness as cleanliness has been thought to be, it is no longer matter of surprise when here and there some good man, whose fame has been heretofore confined within the limits of his parish, springs into sudden notoriety by resort to sensationalism in some antic form, puts his name into every mouth, crowds his church with worshipers, and in time subsides. He may change his suit of black for one of motley to seek out vice in its most secret lair, and, with much endurance and little pity, view without shame, if not embrace, that monster of hideous mien; or in the pulpit he may fall into startling discourse laden with personalities and invective, which might put to blush the veriest scold.

In the medical profession, the struggle for notoriety and self-aggrandizement has been less violent, and, perhaps, a thought less grotesque. We give place in all things to the reverend clergy, but in this instance there are more of us in the fray. They of the cloth who are disposed to doubtful paths in the pursuit of fame and fortune are but few, and, so far as the profane may judge, have not gained the approval of the body of their fellows. Those of us who march well to the front beneath the Æsculapian banner and, as well, fight upon the frontier of professional propriety, are many, and have been honored with the proverbial flattery of widespread imitation.

The time when modest merit won its way through itself alone, probably did not survive the day of Whittington and his cat. Even men of science or learning, or of simple honesty, in actual life are expected to possess some modicum of worldly wisdom. Dominie Sampson, Dr. Primrose, and Jesse Rural are pretty pictures, but hardly models for medical students. Our ingenuous forefather who was called out of church, or who purposely sent the medicine intended for the squire's wife to the wrong house, is no more to be harshly judged than the schoolgirl in her first flirtation. He had no knowledge of the capabilities of modern journalism or of the base purposes to which they might be put, and, let us trust, would have scorned them if he had. It is not possible to express in set terms what the medical man who respects himself and his profession may or may not do to legitimately attract attention to himself and his conceded merits, but not more impossible than it would be in any other profession or occupation in life. An educated general sentiment of society in the first instance, and an intelligent and conscientious application of recognized generic principles of propriety to the exigencies of special vocations or social conditions, will sufficiently establish rules of conduct. This seems to comprise the whole field of professional ethics; and the intuitions of any honorable man ought to obviate the necessity for their formal exposition.

In our time, merit has become overbold, if not disposed to play the wanton. There can be no question that personal advertisement has of late been carried far beyond any possible limit of propriety. Such gross offenses as the placarding in public places of special cures for special diseases, flanked by some name still recognized as of the profession, may be excluded from consideration as too near akin to open charlatanism The public press, which is responsible for some things which are good and for many which are bad, has been the most efficient means of vicious individual exploitation. The ostensible journalistic tributes range from the unblushing effrontery of a circus poster to the ingenious elaboration of what is known as a "reading notice." It is true that injudicious friends and unselfish reportorial admirers may place our *confrères*, who are already conspicuous, in a false position. There are, however, instances in which it is difficult to believe that elaborate eulogia with much particularity of time and circumstance are entirely uninspired. Occasional copies of journals have come to hand from distant points of publication, containing full-paged biographies and attractive portraits of our esteemed professional contemporaries, which would have seemed strangely appreciative even if there had not been credible information that they emanated from a "literary bureau," by which they were widely disseminated through the press of the remoter parts of the country. The lengthened description, with careful and minute attention to detail, of ordinary hospital operations, in which the surgeon is credited with having successfully introduced extraordinary and heretofore unknown surgical procedures, is familiar in the columns of the metropolitan press. The equally elaborate recitals of operations in private practice, in which surgeon and patient are alike heroic figures, is made *caviare* at the breakfast table through the same facile agency. If the subject of operation chances to be a person of social distinction, it may happen that the malady for which it was done becomes the fashion, and patients who survive the ordeal of the knife could scarce feel more pride in scars received upon the field of battle. Particular operations in the hands of individual surgeons have been so assiduously chronicled that they have come to be thought in some sort pre-empted by those thus distinguished. The craft of the interviewer, a peculiarly American development of journalism, has been much employed for bringing men of our profession in a semiprofessional way into public notice. It came greatly into vogue during the period of national anxiety which immediately followed the Garfield assassination, when the public mind became congested with an enormous amount of useless, if not positively deleterious, knowledge. The surfeit has been since maintained by generous contributions from a wealth of personal opinion which has sometimes masqueraded in the guise of infallible authority. Technical disquisitions concerning the condition of patients in whom the general community has some real or fancied interest, the determination of diagnoses in unseen and distant cases upon which the surgeons in attendance have been quite unable to agree, or it may be platitudinous discourses upon almost any subject in which the profession may have an interest, near or remote, or even occasionally timely and judicious statements of fact, have constantly adorned the columns of secular journals. It is, of course, possible again that the blandishments of the man of nerve have sometimes betrayed the worthy doctor against his better judgment, and perhaps against his will; but virtue rarely does succumb without temptation, and repentance does not always lead to reformation. The ways in which the press has been made to illegitimately enhance individual reputation have been too varied to follow in detail. They have been as effective in the interest of men of unquestioned professional position as have unconcealed and absolutely shameless advertisements in serving the purpose of the charlatan. It can be hardly doubted that physicians or surgeons in this country, whose celebrity has been exceptionally great and widely extended, have in more than one instance founded and largely maintained reputation upon a newspaper basis. They may be assumed to have been men of ability, skill, and good repute, but the conditions under which we have seen that medical or surgical work is now accomplished preclude the supposition that their phenomenal success has been due to a corresponding superiority to their fellows whose fame has been more strictly confined to their own profession. It is again still possible that they have been the victims, rather than the too willing recipients, of attentions from the members of the fourth estate.

(To be concluded.)

Original Communications.

A FOURTH CASE OF
RUPTURED ECTOPIC-GESTATION SAC.*

By A. BROTHERS, B. S., M. D.

A YOUNG woman of about thirty years of age, separated some three years from her husband, had been brought to Beth Israel Hospital the morning of October 7th with the diagnosis (made at her home by Dr. B.

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* Read before the Society of Alumni of Bellevue Hospital, October 7, 1896.

Gordon and Dr. I. Barsky) of ectopic gestation. Excepting a history of eight weeks' menstrual cessation, followed by irregular menstrual flow during several weeks, nothing definite could be made out. Four weeks ago she had applied at a large hospital uptown, but had been refused admission. She had then spent several weeks in one of the city hospitals situated in the lower portion of the city, but had been discharged unimproved. I saw her at the time of admission, at 11.30 A. M. Her features were anxious and drawn, her lips excessively pale, and she was moaning with pain referred to the abdomen. The temperature was 98° F.; pulse 80, and of fair volume. The abdomen was distinctly distended. Over both lateral regions, and anteriorly halfway up to the umbilicus, the percussion note was flat. *Per vaginam*, the cervix was found pushed anteriorly against the symphysis pubis by a liquid exudate, which clearly gave a sense of fluctuation. Later the sound proved the uterine cavity to be empty and increased in depth by an inch or more.

The probable diagnosis of freshly ruptured extrauterine-gestation sac was made, and the patient sent up to the operating room. In a half hour all preparations had been completed, and with the valuable assistance of Dr. B. Gordon, Dr. L. J. Ladinski, and the house staff, I proceeded with the operation.

On opening the abdomen, a large quantity of dark-colored blood with clots made its escape, showing that rupture had taken place some time previously. On introducing the hand the right tube was found to be the seat of a tumor of nearly the size of a small orange. This, with the corresponding and attached ovary, was quickly brought out of the incision and removed in the usual manner. A large rupture was visible, but there was no evidence of a fœtus. The abdominal cavity was next explored and the free blood mopped out, and the clots were removed. There must have been over a quart of blood present. After considerable difficulty a fœtus of about four months' growth was found in the left side of the pelvis buried among clots. On its removal there was a persistent oozing of blood from the general peritoneal cavity. This was found to be fresh hæmorrhage and was traced to a spot bounded behind by the spine, in front by the omentum, above by intestine, and below by the affected tube. This had evidently been the site of the placental attachment of the abdominal pregnancy which had formed after the tube had ruptured. In other words, the ectopic sac, originally tubal, had ruptured, and had become converted into an abdominal one. On tamponing with iodoformized gauze strips all hæmorrhage was controlled. The patient was then given a subcutaneous salt infusion, and some of the same solution was freely used in the peritoneal cavity to wash out clots. The time occupied by the operation was nearly an hour. At its end the patient's condition was quite fair, the pulse ranging between 120 and 130. Five hours later, when I again saw the patient, her condition was fairly satisfactory. The pulse was still about 130, but of good volume. There had been no vomiting, and pain was only moderate.

The specimens showed a fœtus about four inches in length, a placenta, an umbilical cord, and the ruptured tubal sac with its corresponding adherent ovary.

NOTE.—The patient was discharged, cured, several weeks later. The wound was closed in great part with secondary sutures five days after the operation. A mild pneumonia caused a febrile movement for about a week.

1. SOME UNUSUAL CASES OF INFLAMMATION OF THE APPENDIX VERMIFORMIS.

2. THREE CASES OF SUPRAPUBIC HYSTERECTOMY.*

By CHARLES CLIFFORD BARROWS, M. D.

I WILL ask your attention to the reports of eight cases, with specimens, selected from my work during the summer months, since we last met. I have selected these because each presents something of interest out of the usual run of cases of similar general character. There are four cases in which the appendix vermiformis has been removed, two in which inflammation of this organ complicated ovarian cysts—one that of ectopic gestation and one that of uterine fibroids and pelvic abscess.

There are two other cases of ectopic gestation, one other case of hysterectomy for uterine fibroids and intraligamentous cyst, and one hysterectomy for septic uterus and appendages. Some of the specimens are of unusual interest, as you will see:

CASE I.—E. M., aged twenty-nine years; a native of New York, a widow, and by occupation saleswoman; was referred to me by Dr. Hamlen on August 24, 1896. Her history shows that she began to menstruate at fifteen years of age, and has been regular until four months ago. Since that time her menstruation has been profuse, lasting a week at each period. She has also had leucorrhœa, and has been obliged to take three douches daily to keep herself free from the irritating effects of this discharge. She has had one child, eleven years ago. Examination of the urine shows it to be normal in reaction, with three per cent. urea; no albumin nor casts. She has had the ordinary diseases of childhood, and denies alcoholic and venereal history.

Her present illness began four months ago with severe pain in the suprapubic region, frequent and painful micturition, and profuse painful menstruation, recurring every two weeks, followed in the interval by severe leucorrhœal discharge. Examination reveals a uterus normal in size, deflected to the left of the median line by a tumor the size of a small orange situated in the region of the right ovary. On opening the abdomen by the median incision a small ovarian cyst the size of an orange was found on the right side. Adherent to the posterior aspect of the cyst was an elongated appendix vermiformis, inflamed and thickened, and bent upon itself. The cyst was removed, its pedicle being ligated with silk. The appendix was then tied off with catgut close to the cæcum and removed, the stump being touched with pure carbolic acid. The abdomen was closed without drainage with the figure-of-eight silkworm-gut suture.

The patient has made a satisfactory convalescence and is now well.

CASE II.—Miss D., a trained nurse, was referred to me on July 6th by Dr. Gardner, with the following history: She is unmarried, and has always been well until six weeks prior to admission, when she began to suffer from severe pelvic pain, together with frequent painful micturition and severe pain on defecation. She was much relieved during menstruation, but on the cessation of the flow the symptoms reappeared. She has been confined to bed for two weeks, and during the last five days has had fever, with daily chills and severe sweats. She suffers constantly from nausea, and vomits everything taken into the stomach.

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* Read before the Society of Alumni of Bellevue Hospital, October 7, 1896.

When seen by me, the patient's temperature was 102.8° F.; pulse, 128, small and wiry; and respiration, 30. Her abdomen was greatly distended, tympanitic, and exquisitely tender to the touch.

Examination by the vagina revealed a uterus fixed in the pelvis by a mass of inflammatory material on each side and behind. The abdomen was so distended that nothing unusual in the region of the cæcum could be discovered.

The abdomen was opened by the median incision, and the peritonæum found to be generally acutely inflamed. The origin of the trouble was found to be a suppurating ovarian cyst of the right side, to which was adherent an acutely inflamed appendix vermiformis. The cyst and appendix were removed, the peritonæum was cleansed as far as possible of serum and lymph, and a Mikulicz gauze drain was introduced through the abdominal incision to the bottom of the pelvis. The wound in its upper two thirds was closed with silkworm-gut sutures. The gauze was removed on the eighth day after the operation. The patient rallied slowly, and for several days was desperately ill, but ultimately made a good recovery, and is now entirely well.

Case III.—The patient, a widow of forty-three, was referred to me by Dr. C. C. Knight, of Peekskill, with the following history: Four years ago she had removed from her uterus, by a surgeon of this city, a small fibroid polypus. She did not recover from this minor operation as she should, but developed in the course of the next month an accumulation of pus in the left side of the pelvis. This was opened by an incision along the line of Poupart's ligament on the left side, and also into the vagina in Douglas's pouch. She improved slowly, and at the end of four months she returned to Peekskill, where she has been able for the past four years to follow her occupation, that of obstetrical nursing. Her occupation has, however, been constantly interfered with by repeated attacks of peritoneal inflammation, coming on usually at the menstrual periods, which have been very profuse and exhausting in character.

I saw her first on September 10th with Dr. Knight, of Peekskill.

She was just completing a profuse menstruation of two weeks' duration, and was confined to bed, with temperature 102° F., and pulse 110 to 120. She had some nausea and vomiting, frequent chilliness and sweats, and presented the general aspects of mild sepsis. She complained of much pain in her pelvic region, and especially in the right iliac fossa.

Physical examination revealed the presence of a firm, hard, non-fluctuating tumor, filling the whole pelvis, and immovable—apparently a uterine fibroma. Protruding from the cervix uteri was a small polyp, submucous in character. This tumor could be outlined above the pubes, and reached halfway up to the umbilicus. In addition to this apparent fibroid tumor there was a tense fluctuating tumor as large as a small cocoanut, reaching to the level of the umbilicus in the right iliac fossa. On pressure from above this was found to communicate with a point of fluctuation behind the cervix uteri in the vagina. This tumor was slightly movable, though to a very limited degree.

Dr. Knight informed me that this tumor always increased in size very markedly about the menstrual period and then gradually decreased until, at the intermenstrual period, it was scarcely perceptible on palpation. There was never at any time any discharge of pus from the vagina or rectum.

A week after I saw the patient at Peekskill Dr. Knight sent her to me here for operation. When she arrived her temperature was 99.6° F., and her pulse 110. The pelvic tumor was as described above, but the fluctuating mass had almost disappeared, being apparently of about the size of a hen's egg.

On the following day, September 18th, I opened the abdomen in the median line. The pelvic cavity was filled by a nodular fibroid uterus to the right, and above which there was a flaccid tumor about as large as a walnut, with a process dipping down into the pelvis behind and adherent to the uterus. These tumors were covered by coils of intestine united to them by the firmest adhesions I have ever encountered. Attached to the flaccid sac was the appendix vermiformis, the two being united by old, firm adhesions.

It was with great difficulty that I succeeded in separating the adherent intestines. I then tied off the appendix vermiformis with catgut, touching the stump with pure carbolic acid, as is my custom. After tying the tubal and ovarian vessels on the top of the broad ligament, I found it impossible to lift up the fibroid uterus sufficiently to reach the uterine vessels, since the tumor was so firmly fixed in the pelvis. I then approached it by the vaginal route, clamping the uterine vessels and freeing the tumor. It was then drawn out without great difficulty. A Mikulicz gauze packing was placed in the pelvis and vagina and the abdominal wound closed with the figure-of-eight silkworm-gut suture. As the operation had been a tedious one, and the patient was suffering somewhat from shock, an intracellular saline injection was given. The patient has had a satisfactory convalescence and is now well. Examination of the tumor shows a hard, nodular fibroid of the uterus and a pus sac with very thick walls adherent to and communicating with the lumen of the appendix. It was then evident that this was the route through which the pus had escaped at the times when the pus sac collapsed. I believe that the reason this occurred at the menstrual period was because the uterine tumor, being congested, was lifted higher in the pelvis; the appendix was thus relaxed, and the pus escaped through it into the colon. This pus, in traveling the length of the colon, was so mingled with fæcal matter as not to excite notice when voided.

These cases of appendicular inflammation, complicating and masked by disease of the pelvic organs, are extremely interesting, and it seems to me that the report of such cases just now is very timely. You are all, I take it, familiar with the brilliant results that gynæcologists have been having with operations upon the pelvic organs by the vaginal route.

This method appeals to all of us, and more particularly does it appeal to our patients. Many patients will submit to a colpotomy who will not permit a laparotomy. In this way we may possibly be tempted to adopt this route when it would be best to adhere to the older operation by the median suprapubic incision. These cases serve well to emphasize this note of warning, for in none of these cases would it have been wise or safe to approach the site of trouble by the vaginal route.

Case IV.—The patient, a maiden lady of fifty-six, was referred to me by Dr. Brown, of West Virginia. The patient had always enjoyed good health. Four years ago she had passed the menopause without trouble of any kind. In May last she noticed a swelling in the suprapubic region. There was no pain or tenderness connected with it, and she paid little attention to it. Soon, however, she realized that it was becoming larger, and consulted Dr. Brown, who advised her to come to New York for its removal.

Physical examination revealed a nodular tumor as large as a human head occupying the median line and freely movable.

On September 17th I opened the abdomen by the median incision. There then appeared two tumors adherent to each other—one a nodular uterine fibroid, the other an intraligamentous cyst, each the size of a child's head. Tying off the upper part of the broad ligaments with silk sutures, I enucleated the cyst and removed the uterus with cervix entire, as is seen in the specimen I show you. There were but four ligatures required, one for each of the uterine and ovarian vessels. The cut edges of the vagina were turned in, and the peritonæum closed over it, the abdomen being closed without drainage. The patient's temperature was never above 99° F., and she is now entirely well.

Case V.—The patient, an actress, twenty-six years old, married, was referred to me by Dr. Nary on September 8th. Her family and previous history is unimportant.

Her present illness began seven weeks ago with severe cramplike pains over the lower portion of the abdomen. This was increased on micturition and defecation. During the week prior to admission the bowels had been constipated, the patient has vomited frequently, and the abdomen has become greatly distended. She has had frequent chills and profuse sweats. Temperature, 103°; pulse, 110, small and thready; respiration, 28. Physical examination shows the abdomen much distended and tender to the touch; the uterus is somewhat enlarged and immovable, and the pelvic cavity is filled by a mass, boggy and tender to touch. As the patient was evidently suffering from septic peritonitis I operated at once, at seven o'clock in the evening. On opening the abdomen by the median incision there were found numbers of small collections of flocculent serum here and there in the peritoneal cavity, encysted by intestinal adhesions. These varied from the size of an egg to that of an orange. Their contents were evacuated and the adhesions were broken down. The tubes and ovaries were the site of purulent accumulations, the right tube containing four ounces and the left two ounces of pus. All the tissues were extremely soft, and ligatures were seated with difficulty. Working as rapidly as possible, because of the condition of the patient, I removed the annexa together with the uterus entire. A Mikulicz gauze drain was carried through the opening in the vagina and the abdominal wound closed with silkworm gut as usual. The operation consumed twenty minutes. The patient made an excellent recovery, and was discharged cured October 1st.

Case VI.—The patient, thirty-four years old, a native of Ireland, married, was sent to Ward 23, Bellevue Hospital, by Dr. Carter on August 10, 1896.

She has been married eleven years and has never had children—having miscarried once at four months. She has had the ordinary diseases of childhood, but otherwise has always been well. Gives a good family and personal history, with the exception that she takes whisky every morning and two or three pints of beer each day. Denies venereal history. Urine: specific gravity, 1.010; urea, one and a quarter per cent.; no albumin; microscopical examination negative. Her present illness began about one month prior to admission, when she was seized with violent pain in the lower part of the back and abdomen, accompanied by nausea and vomiting. This was accompanied by a bloody vaginal discharge, which continued up to date of admission. Has suffered daily from nausea and vomiting since the illness began. Physical examination shows the uterus normally situated, but somewhat enlarged. Behind it and to the right is a boggy mass filling the lateral and posterior fossæ.

The abdomen was opened by the usual median incision. A large hæmatoma, shut in by adhesions and filling the space to the right and behind the uterus, was then encountered. The origin of the blood was found to be a ruptured tubal pregnancy, the break in the tube being about the middle third. The left ovary and tube were practically destroyed by inflammation. Caught in the inflammatory mass on the right side was the appendix vermiformis which had undergone parenchymatous inflammation. This was tied off, as in the other cases reported, and the hæmatoma together with the uterus and annexa removed complete to the vagina. Vaginal gauze drainage was established and the abdominal wound closed. The patient made an uninterrupted recovery; was discharged September 24th, well.

I have reported the cases of appendicular inflammation because they have all been encountered in operations for other grave conditions, and have not been considered as the primary reason for making the operation.

We not uncommonly find the appendix inflamed and adherent in inflammatory conditions of the pelvic organs. Indeed, it is my custom always to examine this structure whenever I open the abdomen for any cause, but I have never before seen such a case as the second one reported to you, where the pus was discharged from a pelvic abscess through the appendix. Again, the combination of ectopic gestation and appendicitis is new to me.

In addition to the cases requiring hysterectomy together with appendectomy, I desire to report two other cases of ectopic gestation occurring in my practice during the summer, one of them demanding hysterectomy, the other a less formidable operation, for their relief:

Case VII.—M. O., married, thirty-one years old, came under my care June 30th, with the following history: The patient has had five children by natural labors, the last eight months ago. She has been well, with normal menstruation, until six weeks prior to admission, when she "took cold" during menstruation. The flow was checked and she was seized with severe cramplike pains in the lower abdomen. During the past six weeks she has had repeated attacks of violent colicky pains in the abdomen, accompanied by profuse bloody discharge from the vagina. Two weeks prior to admission she had a very severe attack, accompanied by faintness and vomiting. She rallied in the course of twenty-four hours, but has continued to suffer from abdominal pain and weakness. Vaginal examination shows a uterus of twice its normal size, surrounded by a soft, boggy tumor filling the posterior and lateral fossæ.

When the abdomen was opened by a median incision the cavity was found to contain large quantities of coagulated blood. This being removed, the right Fallopian tube and ovary were found to be the site of destructive inflammation. The left tube was distended and ruptured at the junction of the inner with the middle third. The ovaries, tubes, and uterus were removed, and the vaginal and abdominal wounds closed without drainage. The patient made an uninterrupted recovery, and on August 3d was discharged, cured.

CASE VIII.—L. D., married, thirty-four years old, was referred to me by Dr. Carter.

The patient has been married eleven years, but has never had children. She has been well and regular in her menstruation until six weeks prior to admission, when she missed her period. Two weeks after this she was seized with severe pain of a paroxysmal character in her abdomen and back, accompanied with nausea and vomiting. Three weeks prior to admission there appeared a bloody vaginal discharge, together with decided increase in the abdominal pain. The patient has been up and about, but has been unable to do any work for the past month.

Vaginal examination shows an enlarged uterine body, and to the right and behind the uterus a tense, semifluctuating tumor as large as a child's head.

The abdomen was opened in the median line and the tumor found to be a hæmatoma in the folds of the broad ligament, due to a rupture of a tubal gestation. The tube was tied off and removed with the clotted blood. The pelvis was sponged dry and the abdomen closed.

The patient made an excellent recovery, and was discharged on September 24th, cured.

All of the cases characterized as tubal pregnancy were examined microscopically, and the diagnosis was confirmed in this way, although in none of them was a fœtus found. Rupture had occurred prior to six weeks' gestation.

REPORT OF
TWO SUCCESSFUL CASES OF PROSTATECTOMY.*

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THE first case I have to report is that of a man, sixty-seven years of age, who was twice a patient during my service at the J. Hood Wright Memorial Hospital.

He was first admitted in November, 1895, with an attack of acute retention of urine, which his physician had been unable to relieve by the use of the catheter and for which suprapubic aspiration of the bladder was resorted to.

His previous history was indefinite, but indicated that he had been suffering for some time with difficulty in emptying his bladder. He was in possession of a dirty catheter which, he said, he had been in the habit of using occasionally for several months. At this time he had a very acute cystitis, and the prostate could be felt as a very large tumor projecting backward toward the rectum. His urine was very foul, and the calls to urinate were very frequent. The amount of residual urine varied from four to six ounces or more. He was treated by rest in bed and daily irrigations of the bladder with various solutions. Under this treatment he improved considerably, his residual urine diminished in amount, and he was quite comfortable. The size of the prostate, as evidenced by rectal touch, seemed somewhat decreased, and at the end of about a month, when he was discharged to become an out patient, he could pass his urine himself without much difficulty. He was instructed how to keep his catheter clean and how to use it. At this time he was anxious to have some operation performed for his permanent relief, but his apparently feeble condition and the fact that he had improved so much under palliative measures led us to decide against it at that time.

On January 22, 1896, he was readmitted to the hospital, suffering with another severe attack of cystitis. He had failed to report as advised, and had neglected the instructions as to the necessity of cleanliness in the use of the catheter, his nature and environment being such that cleanliness seemed an impossible attainment.

Examination at this time revealed a very much enlarged prostate. A catheter was made to enter the bladder with considerable difficulty, and about four ounces of very turbid ammoniacal urine were withdrawn. His temperature was normal. The urine was 1.019 specific gravity; alkaline; full of pus and albumin. The old man was suffering intensely with vesical pain and frequent and difficult urination. He was much worn from loss of sleep, and appeared quite feeble. He was put to bed, and his urine drawn and bladder irrigated twice a day with a solution of permanganate of potassium, 1 to 2,000.

Under this treatment he obtained some relief, but on February 10th suffered from an attack of retention. The catheter withdrew fifteen ounces. From this time until the end of the month, when the operation was done, he continued to have pain and did not stand catheterism so well. As it did not seem possible for a patient to maintain catheter life safely under the conditions in which he was obliged to live, a suprapubic cystotomy was determined upon, with a view to maintaining permanent drainage in case it should not be found feasible to remove the prostate.

On February 29, 1896, a little over a month from the date of his admission, ether was administered and a suprapubic cystotomy done in the usual manner. After opening the bladder the large prostatic tumor could be felt by the finger. The enlargement of the lateral lobes seemed most marked, and the contact of their opposing sides with the prostate congested would seem to explain, in this case, the mechanism of his frequent attacks of retention. The middle lobe also projected somewhat, but did not constitute a distinct bar to the urethral outlet.

The pelvis of this patient was very deep, and considerable difficulty was experienced in enucleating the gland. An assistant aided me very much, however, by pushing up the prostate through the anterior wall of the rectum with his finger. The mucous membrane was spared as much as possible, and an attempt was made at a clean enucleation. This, however, was impossible, and the large succulent growth was removed piecemeal by the fingers and scissors. The specimen shows, I think, those portions of the median and lateral lobes which projected into the bladder and encroached upon the urethral outlet, and, though it is shrunken somewhat in the alcohol, represents a prostate of large size.

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* Read before the Society of Alumni of Bellevue Hospital, November 4, 1896.

There was considerable oozing of blood during the enucleation, and the operation was prolonged and difficult. At its close the cavity of the bladder was packed with gauze, and drainage established by means of a large catheter through the suprapubic wound. Shock considerable; good recovery from ether. There was some hæmorrhage during the night which yielded readily to irrigation of the bladder with hot saline solution. The patient went along very comfortably for about ten days, the temperature never rising above 100° F. On the 11th of March, following an attempt to remove the suprapubic drainage-tube, the temperature went to 103.8° F., and the patient had considerable pain. The tube was reintroduced and left for a few days more, the wound in the meantime granulating nicely, and temperature falling nearly to normal. By the end of March the patient was able to pass a small amount of urine voluntarily and the wound had nearly closed. After this time, when he began to sit up, the leakage became less, and he was able to pass more urine through the natural channel. On April 2d it was found that the catheter passed eight inches before entering the bladder, whereas just before the operation the urethral distance measured ten inches before the urine flowed. A rectal examination showed but very slight enlargement at the situation of the prostate.

On the 6th of April he could retain his urine for several hours and pass voluntarily seven ounces. No urine comes through the fistula, though there is slight leakage when the bladder is distended during irrigation. The patient has slight dribbling away of urine from the urethra when standing.

May 2d.—The wound is closed.

11th.—The patient is discharged.

As a result of this rather severe procedure in an old man a very good functional result was obtained. The patient was seen about two months ago. He has discarded the catheter, is able to pass his urine voluntarily, and says he feels very well. I am unable to state exactly whether he still has residual urine or how long the intervals are between the acts of urination. His condition when he left the hospital was certainly good, and has evidently much improved since that time. I shall endeavor at some later time to make more accurate observations upon the final result of the operation.

The second case which I have to present is one of perineal prostatectomy in a man sixty-six years of age.

This patient was admitted to Bellevue Hospital on August 24, 1896, and the following brief history was obtained: Since the age of twenty he has had several attacks of gonorrhœa. Ten years ago he began to have serious difficulty in urination, which culminated in an attack of retention which was relieved by aspiration of the bladder above the pubes. He remained in the hospital for a time and an external urethrotomy was performed for the relief of his strictures. As a result of this operation his condition was much improved, but in a few months his trouble in urination began to return.

He says he has used the catheter occasionally ever since this time, and for the three weeks preceding the date of his admission to Bellevue he had used it constantly. He had suffered from frequent and painful urination for a long time, but for the previous three weeks the irritability of the bladder had become so intense and the spasm so painful that he had been obliged to pass water every few minutes, and had frequent attacks of retention, for which he resorted to the catheter.

On admission he presented symptoms of a very acute cystitis and his sufferings were intense. A catheter withdrew six ounces of urine, which was alkaline, of low specific gravity (1.010), and full of pus and mucus.

The patient could obtain no rest by night or day on account of the extremely painful tenesmus of the bladder. This clearly was not a case for rest in bed, with catheterization and irrigation. It was a case which seemed to call for immediate and free drainage of the bladder.

On August 25th ether was administered and a median perineal cystotomy performed in the usual manner. Previous to the operation the capacity of the bladder had been proved so small that the perineal route had been chosen as the simpler method of entering the small contracted viscus.

On examination of the bladder through the perineal wound by the finger, the lateral and median lobes of the prostate could be felt very much enlarged. The encroachment on the calibre of the urethral outlet of the bladder, in this, as in the other case, seemed to be due to the apposition of the greatly enlarged lateral lobes of the prostate. Tearing through the mucous membrane over these enlarged prostatic masses with the finger nail, I succeeded in enucleating with some difficulty nearly the entire prostate. I regret that the specimen has been lost. The prostate, in this case as in the other, seemed rather soft and succulent. The middle portion was the most difficult to remove, being almost beyond the reach of my finger.

At the completion of the operation the bladder was drained by a large catheter through the perineal wound and siphonage arranged for after the patient was put to bed. The hæmorrhage was moderate, the shock comparatively slight, and the patient rallied well from the ether.

His bladder was irrigated twice daily with a weak solution of permanganate of potassium.

On September 3d, the tenth day after the operation, he was sitting up. His symptoms were at once relieved by the operation and his convalescence was uninterrupted. He was discharged September 22d, a little less than a month from the date of his admission. At this time the perineal wound had healed save for a small granulating surface. There was no fistula. The patient could pass his urine himself without pain. His cystitis had improved so much that urinary examination, September 12th, showed no albumin, and it was much clearer, although still alkaline.* I have not seen the patient since his discharge from the hospital, but consider the result, as regards function of his bladder and improvement of his cystitis, as very good.

In comparing and contrasting these two cases of prostatectomy we are struck with certain points of similarity as regards the probable mechanism of urinary obstruction in both patients.

The patient reported at the hospital three months after the operation, and said he could pass urine as well as when he was a boy.

In both we notice, as a result of the establishment of free bladder drainage, an almost immediate recession and disappearance of distressing pain and tenesmus.

I was struck with the comparative ease and readiness with which the prostate could be removed by the perineal method in this case, a method which is now generally abandoned on account of the difficulty in many cases of reaching and dealing with the enlarged gland. The method proposed by Alexander, of a combined suprapubic and perineal prostatectomy, would seem in many cases to be a most practical operation, combining, as it does, many of the advantages of both methods.

In the first case the suprapubic drainage was, as it often is, most uncomfortable for the patient. The dressings were constantly wet for the first few days and needed repeated changes, as did the bed linen and clothes of the patient. This seems unavoidable in the many cases where, for various reasons, the bladder opening can not be closed tightly about the tube and where it is essential to maintain bladder drainage for some time. The discomforts to the patients of this method of drainage, as compared with those in case of the perineal method, seem incomparably greater. I do not wish to be understood, however, as drawing definite conclusions from these two cases. My object in presenting for your consideration these cases of prostatectomy is not to put forward any new principle in the treatment of prostatic obstruction, but rather to call to your minds the underlying principle of success in these operations of prostatectomy—viz., the complete removal of the obstruction to urination and the establishment of free bladder drainage.

Remembering that the operation is designed to prolong life in a class of sufferers who are frequently enfeebled by age and in whom the bladder trouble is often complicated by lesions of other viscera, especially the kidneys, we should not be surprised if the mortality seems disproportionately large. The unfavorable condition of many patients who are the subjects of this operation is one which the surgeon must accept beforehand as a factor in increasing the death-rate. This fact is strikingly illustrated when we recall the fact that the operation of castration, which under ordinary circumstances has no mortality, shows in these cases of old prostatic disease a mortality nearly if not quite as large as the much more serious operation of prostatectomy.

According to the recent statistics of Cabot,* out of two hundred and three cases of castration for enlarged prostate there were thirty-nine deaths, a mortality of 19.4 per cent. The same author collected reports of twenty-two cases of ligature and division of the vas deferens, with seven deaths. He attributes the high death-rate in these so-called minor procedures to the fact that in castration for enlarged prostate the diminution of the size of the organ is often so slow as to be of little immediate use in stopping the back pressure on the kidneys, which is especially harmful at a time when the operation has laid a fresh stress of work upon them. The mortality rate in cases of suprapubic prostatectomy was, in the earlier series of cases, estimated as high as twenty-five per cent. Later tables show that with increased familiarity in the technics it is safe to place it at a considerably lower figure. Cabot thinks it safe to place it below twenty per cent., and considers it fair to assume that with added experience in the operation the death-rate will be greatly reduced.

With a mortality no greater or slightly less than that of castration for prostatic hypertrophy, with the further advantage of allowing thorough exploration of the bladder for other possible conditions, and with the possibility of complete removal of the obstruction and thorough drainage of the bladder, the operation certainly should be ranked as a thoroughly justifiable and satisfactory method of procedure in properly selected cases.

In cases of prostatic obstruction, complicated by an intense cystitis, some method of treatment which includes free bladder drainage as well as the removal of the enlarged gland would seem to be imperative.

ULCERATION OF THE NASAL SÆPTUM.*

By T. C. CHRISTY, M. D.,
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The object of this paper is to present before the fellows of this society a group of cases in which the lesion, with loss of substance, was chiefly located on the mucous membrane of the sæptum nasi. No other landmark was visible excepting in one of the series, and in all the integrity of the sæptum was seriously endangered. Such lesions ordinarily are not encountered in the early stage of their development, consequently their definite causal relations and the pathological significance are the factors lacking.

Patients seek advice and relief under conflicting circumstances, when it is uncertain how far the limit of the inquiry may be extended. To hesitate or delay is to doubt at a time when prompt action is necessary, and the consultant is compelled to depend on his judgment and experience to prevent a serious result in what at first may appear as a thing of feeble importance.

The patients in this series first dated the onset of their trouble from—

(*a*) "Taking cold," and at examination had

(*b*) Obstruction of one or both nostrils to free respiration.

(*c*) Pain over the superior nasal and frontal region corresponding to the obstructed naris.

(*d*) Generally, abolition of the sense of smell.

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* A. T. Cabot, *Annals of Surgery*, September, 1896.

* Read before the American Laryngological, Rhinological, and Otological Society at its second annual meeting.

(*e*) Occasionally, pain in the eyes, or disturbance of vision.

(*f*) Pain in one or both ears.

Objective Symptoms.—(*a*) Nasal intonation.

(*b*) Externally, signs of acute inflammatory reaction extending over the obstructed naris, or, in the more chronic forms, the nose of a bluish cast, or the skin thickened, dry, and scaly.

(*c*) The difficulty often extending to an impossibility of inspecting the parts, owing to the infiltration of tissues.

(*d*) The ineffectual influence of solution of cocaine for inspection purposes.

(*e*) The pale, sodden, or macerated condition of the tissues involved.

(*f*) Pain on swallowing.

(*g*) The nature and appearance of the nasal discharge a clear, glairy slime.

(*h*) Tendency to frequent hæmorrhage.

(*i*) The marked physical depression of the patient.

Case I.—August 30, 1887. Referred by a professional friend. Married woman, thirty-six years of age; one child living and healthy.

Complains of deafness in her right ear, pain on swallowing, obstruction of nostrils.

Speaks with nasal intonation. Has had a catarrhal discharge from the nose for some months, but no great inconvenience. On July 3d she contracted a very severe cold; three weeks later, on her return from Chautauqua Lake, she felt a pain in her throat which has been continuous and increasing ever since. Four weeks after, dysphagia was noted.

On examination the membrana tympani of the right ear was normal; the right naris anteriorly was completely closed, the soft parts being infiltrated and thickened; the left naris lined with a thin crust, the sæptal parts being chiefly involved. There was partial paralysis of the palatal curtain, more marked on the right side than on the left. Uvula reddened and swollen. Rhinoscope posteriorly revealed an ulceration several lines in extent at the junction of the right naris with the vault of the pharynx, on the margin of the sæptum. The spot was covered with muco-pus, and when cleansed the edges were sharply defined; the surrounding parts highly inflamed; the right nostril posteriorly was occluded, cocaine, four-per-cent. solution, having no astringent influence upon the infiltration of the swollen tissue, the discharge from the nares resembling thin barley water.

Incidentally a diagnosis was early established in this case, and constitutional remedies with appropriate local applications improved the special senses of hearing and smelling in one month's time. At the end of three months the lumen of the nares was fully restored and the ulcer healed, but the palate remained paretic. The sæptal mucous membrane was thin and like a film, eroded in many places, and required careful and constant care to prevent its destruction.

The patient finally disappeared before being completely cured.

Case II was referred to me by the same professional friend in September, 1889. A married woman, about thirty-two years of age. Mother of one child about eleven years of age; healthy. The patient was accompanied by her husband, who said that she had always been healthy; there was a tendency to consumption in her mother's family.

In March of the present year she began to experience great difficulty of breathing through the nasal passages, previously unobstructed. She had been under constant treatment, both local and general, during this period, seven months, excepting for three weeks, when she felt better; still, the difficulty of breathing increased instead of diminished; the last topical treatment was made three days previous to the first consultation; the line of treatment employed was not known to the patient.

September 23d.—The external appearance of the nose was dry and shiny, owing to the infiltration of the subjacent tissues; there were obstruction of the nares, nasal voice, suffusion of the conjunctivæ, pain over the base of the nose, dull, heavy pain referred to the right ear to-day for the first time, with loss of sense of smell and appetite.

Rhinoscopic inspection, anteriorly, was made with difficulty, owing to the infiltration of the tissues; the soft parts were bathed in a thick mucus, pale and sodden in appearance; the sæptal surface in both nares was thickened from the normal, appearing as if "gouged out" in spots, or as if "gnawed out," similar to the ravages of mice on cheese; over all covered with a broken film resembling mica, studded with easily bleeding granulations.

From the anterior angle of the sæptum of the right naris projected a fibrous growth of the size of a split pea with a pedicle; at the junction of the sæptal cartilage with the upper angle of the vomer was a bleeding point, while the parts along the upper margin of the sæptum in both nares, extending to the superior turbinate and the posterior portions of the nostril, were acutely inflamed—quite in contrast with the lower and anterior portions of the nares; the condition arising presumably from the reaction caused by irritants.

Two weeks were consumed in subduing this inflammatory condition; the obstruction of the nostrils and pain in both ears were continuous.

October 8th.—Respiration through the right naris free; the little fibrous growth projecting from the sæptum had nearly disappeared; the upper sæptal surface was less reddened; the infiltrations of the surrounding parts decreasing, the frayed or scooped-out aspect of the sæptum disappearing; some pain still in the middle ears; each membrana tympani dull and lustreless. Left naris narrow, devious; the parts are still swollen. Patient's appetite is better. To cleanse the parts, alleviate the irritation, and advance the physical condition of the patient were the first indications.

21st.—During the last week of October the patient had a profuse unprovoked hæmorrhage from the right surface of the sæptum, otherwise the parts gradually improved, but the progress was far from satisfactory; the obstruction of the nares was intermittent and the general discomfort intensified, even when the nares were open during moist and foggy weather.

March 5th.—There seemed to be indications of pelvic inflammation; pain in the back of the neck; weariness on exertion; nausea; lumbar and ovarian neuralgia, and the patient was referred to Dr. Werder; so that the appearance of the nasal surfaces and accompanying symptoms were not again noted until March 21, 1890.

The patient had been in bed some three or four weeks with a marked attack of influenza; applications of galvanism by Dr. Werder had relieved the pelvic irritation. The patient was better, the respiration free, and the mucous membrane gradually returning to its normal condition. It is proper to say that at no time during the duration of the treatment was it possible to establish constitutional infection as a primal cause.

A preparation of hydriodic acid seemed to be of more benefit that any remedy as yet employed. During the summer vacation the patient was seen by Dr. Day, a fellow of this society. He informs me that he experienced great difficulty in inspecting the nares on account of the intumescence. By the use of a laminaria tent he discovered an excrescence in the left naris projecting from the middle of the lower turbinate; this was cauterized with a dull-heat electrode.

September 12, 1890.—The right naris unobstructed; the right side of the sæptum, which originally was the worst, now healed. From the anterior extremity of the right lower turbinate projected a large granulation, which was cauterized with the mitigated caustic pencil. In the left naris the point cauterized six weeks previously was not healed; and directly opposite, on the sæptum, was a superficial sluggish ulcer, several lines in diameter, which proved obstinate—not increasing in size, but assuming a cup-shaped appearance, and gradually disappeared under the local use of pure carbolic acid. The aspect of the lower turbinates changed from week to week, granulations appearing at different points whenever in contact with the sæptum; these were cauterized with the galvano-cautery lightly applied, or pure carbolic acid.

The patient did not tolerate mercurials and did badly on the iodides, but took them to the point of toleration, only in small doses. Two months later, January 24, 1891, a teatlike growth, of the size of a bean, was removed with a cold-wire snare from the posterior third of the left lower turbinate; the thickening of the entire sæptum is diminishing, the cup-shaped ulcer not yet healed.

The nares are unobstructed and quite clear.

February 21st.—No apparent change from the last date.

September 3, 1891.—The patient is practically cured so far as local appearances indicate; only a slight film collects on the sæptal surfaces; she is to continue iodides.

During a period of three years—an enforced cessation from professional work on account of ill health—the history of the case, with two others of this series, was interrupted and therefore imperfect.

My friend Dr. Day was consulted in March, 1894, two years and six months after the last observation. In his note the following history is given: "When the patient consulted me on March 21st, I found the following condition: At a point about half an inch above the left central incisor was the opening of a sinus a fourth of an inch long and an eighth of an inch wide, leading upward and inward, coming out on the floor of the nostrils at a point three fourths of an inch from the entrance under the sæptum, making an opening between the two nares. The two central incisors had been previously removed and their roots were diseased. I had the left incisor also extracted, but it was healthy. Operation was advised and performed on May 10, 1894. The necrosed tract was cleansed out with the drill and curette, and then packed with iodoform gauze. The process of repair was slow and tedious, complete healing not being obtained until the following October."

Dr. Joseph Willetts, a fellow of this society, and the writer were present during the operation. The necrosed cancellated tissue between the floor of the nostril and the alveolar processes of the submaxillary bone was removed, forming quite a large sinus. Incidentally it has been ascertained that the child of the patient has been under treatment for interstitial keratitis.

Case III. *September 30, 1890.*—I received the following note: "I wish you would examine Mrs. McC.'s nose and give me your opinion. The trouble began nine months ago just as you see it. For two weeks she has complained of the ulcer at the entrance. It seems to be raising or filling up the nostril. I have seen the case occasionally within the last six weeks."

Examination.—Right nostril closed; the external surface of the right side of the nose extending to the eye was red, glistening, and very painful to the touch. Anterior rhinoscopy was made with difficulty on account of the swollen condition of the soft parts. The infection was communicated from an ulcer on the middle part of the sæptum to the outer wall of the naris, causing an extensive loss of mucous membrane extending down to the entrance of the naris. The infiltration very marked and dense; deviation of sæptum to the left. The ulcerated surface was touched lightly with a solution of nitrate of silver, and the parts were dressed with cotton tampons sufficient to protect the adjacent surfaces.

The history was not definite; nasal catarrh of some months' standing, with the appearance of the ulcer, as described. The gentleman who referred this case to me is a man of wide experience, a most excellent clinical observer, and of good judgment. He was quite loath to accept my opinion as to the cause, that of a probable specific origin, from the fact that the patient and family had been under his care for a number of years. No trace of constitutional affection had been discovered by him. Two days later the patient returned and placed herself under my charge; her physician had given her a lotion of chloride of ammonium with a sixteenth of a grain of bichloride of mercury internally, which was subsequently changed for convenience' sake to red iodide in the same dose.

Two weeks after the first examination a small flake of osseous material—a slight exfoliation—was removed from the left nostril, the right being the one involved, but I was unable to discover the source, no lesion or ulcer being visible.

The patient improved slowly, with the exception of an attack of nasopharyngitis at the end of the first month, caused by an ulcer in the anterior portion of the vault of the mouth—oral surface.

The patient did badly under mercurials and was obliged to suspend them; but when a cup-shaped ulcer developed on the left side of the sæptum, which threatened perforation, a resort to the "mixed treatment" with cauterization of the diseased tissue with nitrate of silver prevented perforation, though the constitutional remedies were not at all well tolerated.

At the end of four months, January 26, 1891, the local appearances were improved, the loss of substance restored, the pharyngeal surfaces alone being dry and uncomfortable; taking one dose daily of five grains of iodide of potassium with a thirty-second of a grain of bichloride.

On March 11th she returned, complaining of pain at the junction of the thyreoid and cricoid cartilages. The laryngoscope shows some infiltration about the arytænoids and subglottic space; no involvement of cords or vocal bands. Appropriate treatment with insufflation of finely pulverized nitrate of silver caused the pain and discomfort of the larynx to disappear. The case progressed favorably, and at the end of the year the patient was cured—one year and nine months from inception.

CASE IV.—Patient married; two children; about thirty-five years of age; in ordinary good health until August 1, 1891, when she contracted a severe cold, which confined itself to the nasal passages, resulting in inability to breathe through the nose, with loss of sense of smell and trouble with vision. She consulted an oculist who, finding no eye lesion, referred her to me.

Status Præsens, October 14, 1891.—Obstruction to nasal respiration; nasal intonation of voice; loss of sense of smell. Externally the nose looks elongated; no inflammation; dry and scaly, with some roughness of the face.

The mucous lining is so swollen and infiltrated that it is impossible to examine the parts. The patient lives on the bank of a large river, the fogs from which increase her sufferings.

Palliative treatment for one week was useless; the left middle turbinate was pressing on the sæptum so as to cause neuralgia over the left eye. As soon as pain was controlled, five grains of iodide of potassium, with a tablet composed of a thirty-second of a grain of corrosive sublimate with an eighth of a grain of ipecac relieved the nasal obstruction so promptly that this prescription was continued. The symptoms gradually disappeared. No lesion of the mucous membrane was noted. The patient subsequently gave the history of a hip-and-knee trouble which followed a confinement, compelling her to keep her bed for several months; she was otherwise healthy; no cause was assigned.

While no ulcer could be detected, even after the infiltration had passed away, the prompt relief of the trouble points to a probable infection.

CASE V.—A clerk, about thirty years of age.

June 29, 1894.—Comes for nasal trouble; both nares obstructed completely; pain on pressure over the left ala nasi extending to the superior nasal region, of one month's duration, with pressure neuralgia over the left eye.

He had rheumatism when quite young, but has never had any nasal trouble previously. He has no cough at present; there is loss of sense of smell and taste. Ever since the third week in May he has been suffering from rheumatic pains, referred to the left leg (below the knee) and ankle.

Status Præsens.—No dullness of hearing; nasal intonation; no pain, except on pressure. Anterior rhinoscopy reveals occlusion of the nares, the parts bathed in a clear, tenacious mucus; marked left deviation of the sæptum, with extended ulceration of the sæptum and adjacent soft parts; on touch, free hæmorrhage.

June 30th.—The following day a better view of the parts was obtained; the lesion of the left side of the sæptum extending to the right side of the sæptum posteriorly, evidently of a specific nature. Admits a specific infection in 1891 for which he had treatment.

The patient is under the professional care of a homœopathic practitioner and is taking extract of yellow pine for rheumatism, as his physician avers he has no specific taint remaining.

Examination of the left leg shows a large node just below the tuberosity of the tibia which is painful, but with no inflammatory action. Cleanliness, with appropriate applications, to which mixed treatment was added, relieved this case, and started him toward recovery. In two weeks he disappeared, as his approaching marriage was positively forbidden, and the outcome of the case is not known.

The cases detailed above are similar in many respects.

(*a*) Four in married women, all between thirty and forty years of age.

(*b*) In the majority of cases the lesion had its origin on the sæptum, and was communicated to the adjacent soft parts by contact with the swollen tissues.

(*c*) The evidence of specific infection was positive in one instance only.

(*d*) In one case there was inflammation of the sæptal cartilage with necrosis of the alveoli of the central incisors, resulting in a sinus communicating with both nares.

(*e*) No appearance of infection outside of the nares, except in one case; acute inflammation of the larynx with threatening periostitis of the hard palate.

(*f*) In no case was there destruction of the hard palate, as so frequently occurs when the sæptum nasi is involved.

(*g*) Marked mental and physical depression with lowered vitality in two cases, in which the constitutional remedies, even in small doses, were indifferently tolerated.

(*h*) The galvano-cautery not an available agent in lesions of this variety.

It is unnecessary before this society of accomplished surgeons to enumerate the points of difference of the three important infectious diseases so apt to cause loss of substance in the mucous membrane of the underlying tissues as well as in the bony skeleton. Tuberculous ulcers, as a rule, are the product of a secondary deposit, slow in development and painless. The ulcer of malignant infection is closely associated with the primary deposit, usually very painful, and may have an inflammatory appearance.

Luetic ulcers do not invariably bear the typical impress, and in the absence of positive corroborative evidence may destroy valuable tissues before their true nature is recognized.

It is not intended to enlarge on the gravity of these cases, but to recall the vulnerability of the sæptum nasi to the pernicious influence of the acute infections and chronic infectious diseases; and further, in a lesser degree, that of abrasions of the delicate epithelium on the sæptum in the young that are feebly nourished; the abrasions and erosions present on the sæptum in those of advanced years due to atrophy and exsiccation of the membrane; and, finally, the effect of the dry and rarefied atmosphere of the higher altitudes on the sæptal mucous membrane.

Observations made on patients coming from old

Mexico, Utah, and surrounding States lead to the conclusion that prolonged residence in higher altitudes in some instances is pernicious to the delicate mucous covering of the sæptum nasi.

42 AND 43 WESTINGHOUSE BUILDING.

EYE STRAIN AS A CAUSE OF EPILEPSY, AND THE RESULTS OF EYE TREATMENT.

(A REPLY TO DR. FREDERICK PETERSON.)

By AMBROSE L. RANNEY, A. M., M. D.

(*Continued from volume lxiv, page 845.*)

CASE III.—This case of epileptic idiocy was sent to me by Dr. A. D. Stewart, of Port Byron, N. Y. It was a desperate case, at best, to handle; and the clinical history of the immediate results that followed the use of spherical glasses and two graduated tenotomies upon the interni were startling (see published records, February, 1894).

His parents, however, on returning home, after only a few days of treatment, disregarded my instructions about keeping the glasses prescribed by me upon the boy; and, in spite of protests from Dr. Stewart and the oculist to whom I referred them, they allowed him to relapse into epileptic idiocy.

I quote the following letter from Dr. Stewart, written in answer to my letter of inquiry about this patient:

PORT BYRON, N. Y., *July 9, 1896.*

DEAR DR. RANNEY: Yours of the 7th inst., asking about the condition of R. G., is received. When I last saw him, a few months ago, he was having fits worse than ever and was fast becoming idiotic.

I received, about a week ago, a letter from Dr. Peterson desiring information regarding the results of your treatment of the case.

I gave him a full history of the case, laying particular stress upon the remarkable change in the boy after the operations and the use of glasses; the entire freedom from spasms for six weeks; in fact, his general improvement until he lost his glasses in the river.

I told him of the parents' refusal to return for further treatment, and added that I had not the least doubt that the boy would have been cured had he continued under your care.

With kind regards, I remain respectfully yours,
A. D. STEWART.

I would call the attention of the reader to the fact that this is the second letter that I find was mailed to Dr. Peterson nearly a month prior to his last reply to me—of which no intimation from him has thus far been given to the readers of the *Journal* or myself:

In my original report of the case in the *Journal* (February, 1894) I quoted a letter from Professor F. W. Marlow (the oculist), of Syracuse, N. Y., to whom I referred this patient for the careful watching that I knew he required. The report of this remarkable case has been given quite fully by me, and my only regret is that I can not add this case to my reported cures, as I had every reason to hope I could do under further inspection and treatment.

CASE IV.—This patient had been under my personal care for epilepsy, at intervals, from 1871 to 1886, and was treated both dietetically and with every combination of bromides. Then his eyes were examined and corrected.

When I first reported his case in the *Journal* (January, 1894), he had been perfectly free from epilepsy for seven years.

Within a year I have held a conversation with him, and he then reported that "his epilepsy was a thing of the past." I am sure that I should have seen him in my office if any seizure had occurred up to this date.

He has now been nearly ten years without an attack.

I would state that the attacks of this patient were typical *grand-mal* seizures, with lividity, complete unconsciousness, frothing, biting of the tongue, and severe convulsions.

He once worked himself under a sofa while in a fit. He has been carried out of a theatre while in convulsions.

Between the attacks he was perfectly well, and was regarded as one of the brightest speculators on the street.

May I ask Dr. Peterson, for the benefit of the reader, why he overlooked this case when he wrote that I had "reported nothing but failures"? The man's clinical history meets every requirement. He had typical *grand-mal* seizures, was well between the attacks, had been treated by every bromide combination with negative results, and has been cured by eye treatment.

CASE V.—The character of the attacks of this patient can not well be questioned. He had cut his head badly in one fit and in another had knocked out a tooth. His father described his attacks, when he brought him to my office, as "frightful to witness"; and he gave in detail all the symptoms of *grand-mal* seizures.

His heredity was a bad one (see my full report of the case)! He had been for some time under the care of a leading neurologist of New York, who had given a very unfavorable prognosis, and had steadily increased the doses of bromides until the mental condition of the patient was deplorable. He was not allowed to go about without an attendant when I first saw him.

I quote a letter from this patient, in answer to my inquiries, as follows:

July 24, 1896.

MY DEAR DR. RANNEY: I have your letter of July 22d. In reply, I would say that I have had no recurrence of my old trouble since April, 1895.
Sincerely yours, H——.

Dr. E. L. Mellus, who sent this patient to me, lately returned from a two-years' trip in Europe—which he has devoted, I understand, chiefly to the study of ophthalmology, because his interest in this case and the treatment of his own eyes by me awakened him to the importance of this field.

I have been unable as yet to get a written reply to my letters to him regarding this case, as I have not ascertained his present address.

I regard this case as one of practical if not absolute cure, from a most unfavorable beginning.

The isolated seizures that the patient has had (three in nearly six years) have all been due to a marked gastric upset—from gross imprudences* in eating, drinking, etc., combined with or due to some maladjustment of his glasses.

He is to-day in charge of one of the largest manufacturing industries in New England; nearly two years have passed since any sign of epilepsy has appeared; and, prior to the last attack, only one very slight seizure occurred in three years. He has married, and is far above the average man in intellect to-day.

This patient is wearing an extremely strong and complicated glass over one eye—and the slightest bending of his spectacle frame alone might cause an epileptic seizure, and I think has caused at least one, although he had done other things to upset his stomach.

If this case only was all that I had to report I should feel that the fact that eye strain must be accepted as a cause of "genuine" epilepsy was established. It is a practical cure from a most unpropitious beginning.

I could quote, from a number of letters written me by others regarding this patient, many expressions of amazement and delight over the wonderful change that had followed the eye treatment.

His immediate family and friends regard him as cured. His eye tests are apparently normal, and his attention has been so frequently called to the importance of keeping his spectacle frames in their proper relationship to the eyes that a marked displacement of his strong cylindrical glass is not likely to occur in the future.

Case VI.—This case of terrible and dangerous epileptic seizures has been reported by me as one of the most difficult and unpromising cases that I or any one was ever called upon to treat.

The history given in the *Journal* (January, 1894) is very full and complete up to that date. At that time the patient had passed two years and a half without any epileptic seizures.

He departed for the West about January, 1895, and lived in a very high altitude. Soon afterward he reported that a series of three attacks had occurred after fainting from the pain caused by two enormous boils. These attacks should not be awarded any clinical significance.†

He has had only this series of attacks in four years and six months. I attribute the relapse of his epileptic tendencies to living in a high altitude. Since his return to New York (fourteen months ago) he has never had a fit.

I regard this case as one of practical cure. Contrast the present condition of this patient with his past, when a room padded with mattresses was always kept ready for his confinement, and thirty-four days of almost continuous convulsions occurred in one year.

This patient was to have been committed to an asylum (as a hopeless and dangerous epileptic) on the sworn testimony of two medical men of repute, had the parents not consented to try the eye treatment at the solicitation of friends before taking so sad a step.

This is another of my "failures" that Dr. Peterson seems to have overlooked.

The "genuine" character of the epileptic seizures of this patient has never yet been called into question; yet, for the benefit of Dr. Peterson, it may be wise for me to state that all who have witnessed the attacks before I saw the patient concur in the description of a most horrible series of convulsions of extreme duration, with total unconsciousness, lividity of the face, frothing at the mouth, biting of the tongue, the epileptic cry, and a more or less prolonged stupor after each attack.

Between these attacks he was as well as any person drugged with bromides and chloral could be. His mother had for years terrific and frequent attacks of typical sick headaches. She was cured of them later by graduated tenotomies performed by me upon her interni.

This patient comes into my office occasionally, and has been seen by me within a week. He is perfectly well, and for fourteen months he has had no sign of any epilepsy. In fact, not counting the three fits that occurred while he lived in an extremely high altitude, he has had no fits for over five years.

Case VII.—This patient had an heredity of epilepsy and insanity. One brother died of epileptic idiocy in an institution for the feeble-minded; the father had dipsomania and, at times, had been regarded as insane.

The fit that this patient had in my office was a typical attack of *grand mal.* He was totally unconscious, livid, frothed at the mouth, was rigid for some seconds, twisted his head to one side, then had clonic spasms of the limbs, and was drowsy after the fit passed off. He had to be held in a chair by my assistant and myself.

He had, while at school, several similar attacks to this one prior to being placed under my care. Originally, his attacks were milder and resembled a fainting spell.

Not long ago, his mother called to have me examine another member of the family. She reported that her son was and had been entirely free from epileptic attacks.

This seems to be another case of failure (according to Dr. Peterson) that I have reported. Even in my last report (January, 1894), this patient had passed two years and a half without a fit and without medication; yet no mention of this remarkable report has yet been made by Dr. Peterson.

Case VIII.—This case was particularly interesting to me, because of the apparent connection between the onset of the epilepsy and an attempt on the part of an oculist to establish binocular vision by glasses.

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* Two of these attacks followed excessive use of champagne with lobster salad.

† The reader is referred to previous remarks of mine relative to causes that may induce occasional epileptic seizures in patients who have been victims to chronic epilepsy. The high altitude in which he was living appears to have acted badly upon his health.

The reader is referred to the full history of this case (*New York Medical Journal*, February 17, 1894). The patient abandoned eye treatment when hardly begun because he had a fit, and his friends urged the bromide treatment. His prospects of recovery seem quite encouraging to me, had he carried on the eye treatment as I advised.

CASE IX.—This case was that of a young girl who had so many severe epileptic seizures within twenty-four hours after I advised the withdrawal of bromides that her physician despaired of her life, used chloroform, and hastily returned to the bromides.

This fact illustrates forcibly that Dr. Peterson's published statement, which I quote here, is not always correct. He says:

"It is a fact which has not as yet received sufficient attention, that in cases of chronic epilepsy long treated with bromides relief from attacks for considerable periods of time follows diminution or cutting off of the bromides."

For nearly ten years I insisted that every epileptic patient who came under my care should pass at least one month without bromides or chloral, and keep an accurate record of the attacks (severe, medium, or light) during this period. This withdrawal of all drugs always preceded any eye treatment; and it was insisted upon by me because the basis of my records before and after eye treatment (in my office) would thus be alike—*i. e.*, the patient's condition would not be masked by the use of drugs for one month prior to the eye treatment and also while this scientific method of treatment was being tested.

Let me analyze the twenty-six cases (here discussed) from this standpoint. In only twelve cases was this point determined.

Fits were increased by withdrawal of bromides, Cases I, V, IX, XI, XVIII, XIX, and XX.

Fits were not modified or decreased by withdrawal of bromides, Cases VII, XIII, XIV, XXV, and XXVI.

In the following cases the effect of withdrawal of the bromides upon the frequency of attacks was not determined: Cases II, III, IV, VI, VIII, X, XII, XV, XVI, XVII, XXI, XXII, XXIII, and XXIV.

Of the twelve patients in whom the effects of withdrawal of the bromides were determined by me, seven experienced a marked increase of attacks and five experienced little if any modification of previous intervals between seizures. In no case were the seizures arrested for any length of time.

This would not appear to justify the implied conclusion which Dr. Peterson apparently desired the readers of this controversy to make—viz., that my cases had improved simply because I had withdrawn bromides from them.

That this inference is not unjust to Dr. Peterson is shown by another statement made by him in the letter containing the previous paragraph quoted, which reads as follows:

"The doctor [myself] therefore rightly says that 'at least ninety per cent. of chronic epileptics have been better without bromides,' but his addition of the phrase 'after a satisfactory correction of their eye defects' shows to what extent illogical reasoning may lead."

When patients have been drugged by all possible combinations of bromides, and often with chloral at the same time, until their mental faculties and physical powers have nearly reached their limit of endurance (and this is too often the case with patients sent to epileptic institutions), I do not wonder that "the reports of hundreds of cases at Bielefeld and Craig Colony" show an improvement by the withdrawal of the drugs from these poor victims. Anything would help them if it gave Nature even a slight chance!

This is the weak spot in all tabulated statistics regarding epileptics from institutions and clinics. The patients tabulated are too poor, too weak often in intellect, too imperfectly nourished, too heavily drugged in the past, sometimes too low in the moral scale, and generally too low in intellectual power to make such reports of as much actual value as they might appear numerically. Nothing can lie so much as figures ('tis said) when manipulated with skill; and patients taken from private practice of a higher type, with wealth, good home surroundings, more culture and intelligence, and who have had the benefit of good medical counsel in the past, are certainly a better basis for clinical deduction than the previous class described.

With this pardonable digression, which the history of this case brings to the surface, I shall proceed with some interesting facts regarding the treatment of Case IX.

This girl was but a child when first seen by me. Her system had been saturated with bromides. She had not menstruated. She was very sluggish mentally; and, physically, she was extremely weak. She had an idiotic brother.

As hers was one of my earlier cases I feel sure that her eye problems were imperfectly solved by me. All tests for hyperphoria were then made with clumsy instruments, with a head rest to insure immobility and a spirit level on the frame of the prisms that rested upon the patient's nose while making the tests.

I am satisfied that the best results of eye treatment were not obtained in her case; yet she showed a wonderful physical and mental improvement. Her fits were materially lessened in frequency. She took no bromides, and grew into a bright and attractive young lady. I have some very interesting photographs of this patient (taken at different stages of my treatment) which show very clearly the physical and mental improvement.

CASE X.—This patient has been cured. No attacks of any kind have occurred for nearly five years.

His severe attacks were typical attacks of *grand mal;* and frequent *petit-mal* seizures had preceded them.

This is another case of failure that Dr. Peterson seems to have overlooked.

Case XII.—This patient has been completely cured of attacks of *grand mal.* She has been referred to by Dr. Hedges, of Plainfield, N. J., in his letter published in connection with Case I.

The following letter from her husband is on file in my records:

July 10, 1896.

Dear Dr. Ranney: I am very glad to say that Mrs. G. has not had any more of those dreadful attacks, nor, so far as I can see, any signs of them. The last was in August, 1893. Next month will make three years.

You wish to know how her present health compares with that before the eye treatment. I do not know how to tell you, as there is no comparison. For four or five years before I took her to you she had been having attacks or seizures at irregular intervals; sometimes one or two a month, and at others oftener. Just before she began the eye treatment she had them very frequently and violent; in consequence of which her strength was almost gone, life was a burden to her, and we had to keep a companion with her all of the time. Since November, 1893, we have had no companion, and she has done her own housework almost continually since that time. In other words, she is a new woman, physically and mentally.

I also wish to add that before taking her to you I had consulted a number of prominent physicians, North and South, and they could do nothing for her. Their medicines apparently did more harm than good.

You made me promise to discontinue the use of all drugs, which we did, simply treating her eyes. Since that time she has used no medicines, nor called in a physician, except for scarlet fever.

It gives me great pleasure to write this letter, only I feel I can not write it strong enough.

If you can make use of me in any way I shall consider it a pleasure to serve you. If it is not necessary to use our names in this matter I should prefer that you will not. However, I shall be glad to answer any letters from any one upon this subject.

In order to make the diagnosis of the character of these attacks positive I wrote to the husband in October, 1896, propounding certain questions to him in regard to them. I publish here his reply in full:

October 21, 1896.

Dear Doctor: I will take your questions in the order in which you have asked them, and try to give you replies to each:

Did Mrs. G. ever give a cry as her attacks came on? No.

Did she ever become completely unconscious? Yes; always.

Did she ever bite her tongue? Yes; several times.

Did she ever froth at the mouth? Yes; but not very much.

Was there any blood in the froth? Yes; I suppose from biting her tongue.

Was there contraction of muscles of arms, legs, and face? Yes, always in each; and her mouth was always drawn very much to one side.

Did she ever fall? Yes, several times, and would have fallen every time, unless she was caught or was sitting or lying down.

Was there ever lividity of the face? Yes.

Did she ever have any warning of the attacks? This is one thing I could never find out. She has always had such a dread of the attacks that she will not talk of them. Many times I have asked her this question, and she would say "No"; but I have noticed that on the days that she would have the seizures she would be different than at other times; that she would have a frightened, nervous look that would lead me to suppose that she had some feelings that made her fear an attack. This is all the warning that I have ever known of.

She commenced having the attacks in February, 1889. They continued until you took her in hand in February or March, 1893, coming at intervals of a few weeks apart all of this time, except when under the strong influence of bromide.

Would Dr. Peterson call this a case of true epilepsy? Is it one more failure that he has overlooked?

Case XIII.—This patient was sent to me by Professor A. A. Smith, M. D., of New York. She has been completely cured of genuine epilepsy by the relief of eye strain through one graduated tenotomy.

Several points of great interest are illustrated by this case. In the first place, the patient had no error of focus, either prior to or after the instillation of atropine. In other words, she was absolutely emmetropic. No carping critic can, therefore, lay any stress upon the exact amount of benefit that must be attributed to the glasses prescribed.

In the second place, the esophoria was almost totally latent. Seven degrees were disclosed later by the patient, after repeated examinations. She would, therefore, have been pronounced by many oculists free from any muscular trouble.

In the third place, the eyes were brought to a state of perfect muscular adjustment by one operation made upon the right internal rectus.

In the fourth place, no further latent muscular defect in the orbit has ever been observed.

In the fifth place, the fits ceased at once after the tenotomy; and have never returned, although three years and six months have elapsed.

In the sixth place, her physical condition has been made perfect and remained so. She had been an invalid.

Finally, she had "genuine" epilepsy—as all my critics must allow upon the evidence here presented.

I quote first a letter from the husband, in answer to my written inquiry concerning the patient, as follows:

July 11, 1896.

My dear Dr. Ranney: Your kind letter of the 17th inst. came yesterday. Mrs. W. was so much pleased that she said she would answer it herself.

She has never felt better or looked better than she does at present.

The only symptom she has had was in July, 1895, on board of a steamer, the particulars of which I wrote you shortly afterward.

The food had been wretched, and for nearly ten days she had gotten along by making tea in her cabin—lunches, in fact. She could not swallow the "hash" prepared on the boat; so that one morning, while dressing, she fell over, till I caught her, helped her on the bed, and she simply kept quiet the rest of that day.

[NOTE.—This, in Dr. Smith's opinion and my own, was only a slight faint. It was not convulsive, nor is any loss of consciousness reported.]

In response to a letter to Professor A. A. Smith, asking him to write me concerning the attacks of this patient, I lately received a personal call from him. He stated at that interview that unfortunately he had not actually seen the patient in any of her epileptic seizures, but had sent her to me for eye treatment because he believed them to be attacks of genuine epilepsy, and had told the family that drugs offered no prospect of any permanent benefit in his opinion.

He advised me to establish the actual type of convulsion that the patient had, by propounding to the husband by letter certain questions that he suggested. I did so; and these were the questions and answers:

1. In her attacks did she lose consciousness completely? "Yes."

2. Did she ever make any noise or give any cry as the attack came on? "Yes."

3. Did she froth at the mouth during the attacks? "Yes, a little."

4. Was there ever a tinge of blood in the froth or on the pillow? "Yes, but not always."

5. Was there any soreness of the tongue after the attack? "I can not say."

6. Was there much convulsive movement of arms and legs? "Yes."

This last report was followed by an unexpected visit from the patient herself yesterday. She is the picture of health, and has had no symptoms of her old malady.

What has Dr. Peterson to say regarding this failure of mine?

CASE XIV.—This patient was having an attack of typical *grand mal* on an average of every fourteen days when I first saw him. He had taken bromides for seven years.

His eyes were perfectly normal in construction. Even under atropine he showed emmetropia. He had a high degree of latent esophoria.

If "counter-irritation" is the reason why graduated tenotomies help epileptics (as Dr. Peterson would lead others to believe) this patient had a full dose. One hand was nearly burned off by overturning a lamp while in a fit, amputations of fingers were required, and his life was in peril for some time.

His condition to-day warrants (in my opinion) the report of "decided amelioration" by eye treatment (see table). He has passed at one time over six months without a seizure, and has had about one quarter of the attacks during the past three years and half that his previous average of attacks would have aggregated in the same time.

CASE XV.—This patient has been practically cured of epilepsy. He is rather hard to control, and does not follow instructions as to regularity of habits, eating, sleep, and exercise.

He keeps very late hours at times, is entered often in trial contests of skill of a violent athletic kind, eats irregularly and too heartily of rich foods, and in many other ways brings about an occasional gastric upset and a very rare epileptic seizure by his own acts. If he lived a regular life, I believe he would never have an epileptic seizure. Furthermore, he uses his eyes constantly, as a bookkeeper, during business hours.

CASE XVI.—This case, in justice to myself, should be excluded from the list of reflex epilepsies, as it is one of organic brain disease. Furthermore, the patient was under treatment but a short time, and no satisfactory eye tests were ever obtained, as his mental powers were too much impaired to make tests reliable. He is reported by me as "unimproved."

CASE XVII.—This patient is also reported in the table as unimproved, although the opportunities for accurate eye work were in no way hampered for one year. I am satisfied that some other reflex causes existed in this case (possibly pelvic). Her epileptic seizures were too infrequent to enable me to tell what clinical results I was to expect from each tenotomy. She was absolutely emmetropic, but had quite a high degree of latent esophoria. This was relieved satisfactorily, yet her fits continued.

CASE XVIII.—This patient came to me with a letter from Dr. H. J. Dwinell, of Barton, Vermont. She showed both crossed and vertical diplopia, accompanied by severe attacks of *grand mal*, and marked evidences of the poisonous effects of the bromide treatment.

Her father came at the same time (with almost identical eye conditions) as a terrible sufferer from headaches. He was completely cured by tenotomies, and has remained well up to our last records of his case.

The treatment of this case was never completed to my satisfaction. It was a very difficult eye problem to handle; and long intervals of rest between the operative steps were deemed by me to be the safest way to establish a perfect adjustment.

The father seemed to fail to appreciate the time and skill required to do this work and ceased to follow up the eye treatment (after an exhibition of pique on his part).

I quoted several extracts from some of his letters in my original reports of this case (February, 1894). The patient went at one time eighteen months with only three light attacks; had resumed practice on the piano; required no attendant as she once had; went to places of amusement as did her friends, and was actively employed in housework during the day. Her general health had been almost completely restored.

The final results of eye treatment in this case I do not regard as yet established; but enough benefit has already been gained to make an impression upon every one who had seen her often in the past.

CASE XIX.—This case was sent to me by Dr. T. J. Martin, of Buffalo, N. Y., nearly four years ago. For about two years I have not seen this child, and the eye treatment has been only partially carried out. She has passed some quite long periods without attacks since she was first seen by me, but of late has had epileptic seizures more frequently than before. Her physician and parents attribute their increase to the approach of menstruation and to overloading of her stomach.

I have reason to believe that a completion of the eye work would lead to still better results than have thus far been obtained.

Case XX.—This case has been completely cured. The patient was sent to me by Dr. Clara E. Gary, of Boston, on June 15, 1893. She had "genuine" attacks of *grand mal,* with frothing at mouth, total loss of consciousness, and rigidity followed by clonic spasms of arms and legs. She did not always bite her tongue, and she had no special aura. She had taken various combinations of bromides for five years. In spite of large doses, she had ten severe convulsions during that period; and after stopping the bromides, she had two severe fits within the space of two months.

From the first visit to my office up to the present time she has not had a single convulsion or any symptom of one. In answer to a letter of inquiry from me, she writes as follows:

July 12, 1896.

Dear Dr. Ranney: If all had not been well with me, I think you would have heard. I am very glad to be able to say that I have never had a return of the old trouble, and only one sick headache in all the time since you operated upon my eyes.

It is such a comfort to be free from these lesser ills, and, for the greater one that hung over me for so long a time, no one can tell what a feeling of thankfulness there is in one who has had the trouble himself and been freed.

I have been to the physician who first had charge of my case to tell him of the success of your treatment, hoping that others might be helped who came under his care.

The time has been so long now that I feel I may call it a cure, although I hardly dare do so. Am I right?

No letter has thus far been received from Dr. Gary in reply to one sent to her former address, but the letter from the patient tells its own remarkable story in a very simple and direct way.

This patient has used her eyes constantly as a bookkeeper. Is this a case of failure in Dr. Peterson's eyes?

Case XXI.—This patient was sent to me by Dr. Elmer Small, of Belfast, Me. The patient had already been subjected to eye treatment in the hands of a local oculist who had cut both interni; hence, as I could only record at the first visit the eye conditions disclosed after two tenotomies, I am not able to report fully on the treatment.

In actual number I do not think the attacks have been very markedly decreased since the last note (1894), although the physical condition of the patient had improved to a remarkable degree when I last saw him. Suspecting that an old injury to his head might be a cause of his epileptic seizures, I sent him to Dr. Robert F. Weir with the following note:

March 13, 1895.

My dear Dr. Weir: The bearer, Mr. T., is an epileptic. The rectification of his eye muscles has done him much good, but has not arrested his seizures *in toto.* He gives a curious history of a fall upon his head prior to the epileptic attacks, and has come from Maine to see if trephining would help him. I should appreciate a written opinion from you as to what you would advise; and, should you choose to act, I would intrust him to your care. Cordially yours,

A. L. Ranney.

To this letter, Dr. Weir sent me the following reply:

Dear Doctor: This patient can not describe his fits sufficiently in detail to attempt any localization, and the point of supposed trauma is too indefinite for action. He should in my judgment be seen in several fits and the sequence of muscular invasion noted down. I may, however, say that unless thus positively localized, trephining will do but little good; and even when localized and treated surgically the improvement is a dubious one. Yours most truly,

R. F. Weir.

Case XXII.—This patient had extreme nystagmus (chiefly of left eye), with daily attacks of typical *petit mal.* The left eye would at all times fly about in the orbit (especially so when the right eye was covered) in a most remarkable manner. She had been operated upon in youth by a Boston oculist for double convergent squint. Both of the interni were completely severed at that time (according to the old method), and the date when the terrible jumping of the left eye began is not known by the parents. The extreme difficulties in the treatment of such a case, when the eyes had already been operated upon years before and after nystagmus had set in, must be recognized by all who have had any experience in the treatment of eye muscles.

I saw this patient last week. She has fewer *petit-mal* attacks each month than when my work was begun upon her eyes, and an almost total arrest of the nystagmus so long as the right eye is not covered. She shows still some tendency toward esophoria and left hyperphoria. She is now wearing prisms because I have felt a hesitancy in doing any tenotomies upon this patient without long intervals of rest between each step.

I have reported this case as one of "decided amelioration" in the following table.

(To be concluded.)

Therapeutical Notes.

A Lotion for Acne Punctata.—Dr. A. Malbec (*Province médicale*, November 28, 1896) recommends this formula:

℞ Borax, Sodium bicarbonate,	} each	10 parts;
Ether	....	20 "
Rose water	....	300 "

M. To be used after pressing out the contents of the follicles and in conjunction with frictions twice a day with sulphur soap and very hot water.

A Lotion for Pityriasis Versicolor.—*Lyon médical* for November 29th takes the following formula from the *Concours médical* for November 4th:

℞ Corrosive sublimate	1 part;
Oil of lavender	4 parts;
Tincture of lavender	120 "
Green soap	80 "

M. Apply the liquid to the affected part and let it dry; three days later, take a bath. One application is said to be enough.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JANUARY 2, 1897.

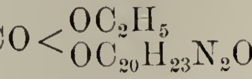
THE RUSTIC WELL.

This prolific source of disease has recently been made the subject of a short and very simple pamphlet by Dr. Theobald Smith, of Harvard University, entitled *Sewage Disposal on the Farm, and the Protection of Drinking Water.* It ought to be read extensively by farmers, for it is issued as a *Farmers' Bulletin* by the United States Department of Agriculture. Professor Smith explains how morbific material finds access to wells, and explains simple and inexpensive devices by which the occurrence may be guarded against. All this, of course, has been done in print over and over again, but generally in publications that have found their way chiefly, if not exclusively, into the hands of physicians and sanitarians. These publications have done a great deal of good by instructing physicians how to explain these matters to the people, but we all know how difficult it still is to make country people realize that the disposal of their refuse and the management of their wells are of any great importance. Professor Smith's pamphlet, backed by the authority of the Department of Agriculture, ought to be able to accomplish much more.

The pamphlet closes with the following very commendable paragraph: "In every community there are public-spirited citizens who could do much good by taking hold of the simplest and safest methods of disposing of sewage and refuse, putting them into practice, and showing the rest of the community just what good can be accomplished and what harm avoided by a little continuous attention to sanitary matters. In this way many may be led to undertake improvements who, with no definite knowledge of the expense involved and with misgivings as to the final success of the undertaking, would otherwise hesitate to make a beginning."

The time is not far off, it is to be hoped, when rural communities will throw off the indifference with which they have thus far, with very few exceptions, regarded sanitary measures of the kind with which Professor Smith deals; and the occurrence of that change of mind can not fail to be hastened by his plain statements and the illustrations by which they are accompanied. We think he has done a great public service.

EUQUININE.

Professor Carl von Noorden, of Frankfort on the Main, has an article on euquinine in the *Centralblatt für innere Medicin* for November 28th. He describes it as the ethylcarbonic-acid ester of quinine, having the following constitutional formula:  $CO<^{OC_2H_5}_{OC_{20}H_{23}N_2O}$. It occurs in white needles which are soluble with difficulty in water, but readily soluble in alcohol, in ether, and in chloroform. It has an alkaline reaction and forms crystalline salts with acids. The chloride is readily soluble in water, the sulphate dissolves with some difficulty, and the tannate is almost insoluble.

The alkaloid itself, which is the form in which von Noorden has used euquinine most largely, is entirely tasteless at first, but has a slightly bitter after-taste, reminding one of the taste of a very weak solution of quinine. If it is taken in sherry, milk, soup, cocoa, or the like, no unpleasant taste is perceived. Healthy persons can take fifteen grains, and in most instances twice that amount, daily without experiencing any unpleasant feeling in the head. Even after a prolonged use of these doses, there were no disturbances attributable to them in any of his patients.

Euquinine is said to be a derivative of quinine, of which it has the characteristic remedial virtues without any of the unpleasant properties of that drug. This is implied in its name. It may be used in all cases in which quinine is indicated, but for any reason is objectionable.

MINOR PARAGRAPHS.

AGAIN THE DOCTOR IN GENERAL LITERATURE.

We have lately received from Dr. Gouverneur M. Smith, of New York, a copy of some pleasing verses entitled *Santa Claus and Mother Goose.* They are humorous, suitable to the season, and well calculated to please children. Dr. Smith has before made creditable contributions to literature apart from that of medicine.

ITEMS.

The Philadelphia Pædiatric Society.—A society has been organized for the study of disease in children, in all its branches, which is to be known as the Philadelphia Pædiatric Society. The following officers have been elected: President, Dr. J. P. Crozer Griffith; vice-presidents, Dr. Edwin E. Graham, Dr. Arthur V. Meigs, and Dr. Frederick A. Packard; secretary, Dr. Alfred Hand, Jr.; and treasurer, Dr. Charles F. Pettibone. The executive committee consists of the following gentlemen: Dr. Alfred Stengel, Dr. J. Madison Taylor, Dr. Charles W. Burr, Dr. William B. Atkinson, and Dr. Thompson S. Westcott.

The Associated Alumni of the Mt. Sinai Hospital have organized with these officers: President, Dr. Albert H. Fridenberg; vice-president, Dr. Richard H. Cunningham; secretary, Dr. Martin W. Ware; treasurer, Dr. Edwin Sternberger.

The Death of Professor Dubois-Reymond, of Berlin, is reported to have taken place on Saturday, December 26th. He was seventy-eight years old.

Change of Address.—Dr. Jean Fresne Chauveau, Jr., to No. 216 West One-hundred-and-third Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 20 to December 26, 1896:*

Brooke, Benjamin, First Lieutenant and Assistant Surgeon. The leave of absence granted him for seven days is extended twenty-three days.

Ewen, Clarence. The extension of leave of absence granted him on account of disability is further extended until January 24, 1897, on account of disability.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending December 26, 1896:*

Crandall, R. P., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to the U. S. Steamer St. Mary's.

Ferebee, N. McP., Surgeon. Detached from the Norfolk Navy Yard and ordered to hold himself in readiness for sea.

Hibbett, Charles T., Surgeon. Ordered to the Norfolk Navy Yard.

Kennedy, R. M., Passed Assistant Surgeon. Ordered to the Naval Hospital, Norfolk.

Whiting, R., Surgeon. Detached from the U. S. Steamer St. Mary's, ordered before the retiring board at Washington, December 28th, then placed on waiting orders.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Sixteen Days ending December 16, 1896:*

White, J. H., Passed Assistant Surgeon. Granted leave of absence for fifteen days from December 12, 1896.

Kinyoun, J. J., Passed Assistant Surgeon. Granted leave of absence for thirty days from December 1, 1896.

Rosenau, M. J., Passed Assistant Surgeon. Granted leave of absence for thirty days from December 2, 1896.

Nydegger, J. A., Passed Assistant Surgeon. Directed to report at Bureau January 5, 1897, for temporary duty in Bacteriological Laboratory. December 9, 1896.

Blue, Rupert, Assistant Surgeon. When relieved from duty at San Francisco Quarantine, to proceed to New York, N. Y., for temporary duty. December 10, 1896.

Jordan, W. M., Assistant Surgeon. To proceed from New York, N. Y., to San Francisco Quarantine for temporary duty. December 10, 1896.

Society Meetings for the Coming Week:

Monday, *January 4th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; Boston Society for Medical Improvement; St. Albans, Vermont, Medical Association; Maine Academy of Medicine and Science (Portland); Providence, Rhode Island, Medical Association; Hartford, Connecticut, Medical Society; South Pittsburgh, Pennsylvania, Medical Society; Chicago Medical Society.

Tuesday, *January 5th:* New York Neurological Society; New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Franklin (annual) and Niagara (semiannual—Lockport), N. Y.; Hudson (Jersey City) and Union (quarterly) New Jersey, County Medical Societies; Androscoggin, Maine, County Medical Association (Lewiston); Chittenden, Vermont, County Medical Society; Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *January 6th:* New York Academy of Medicine (Section in Public Health); Harlem Medical Association of the City of New York; Society of Alumni of Bellevue Hospital, New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Maine, County Medical Society (Bangor); Bridgeport, Connecticut, Medical Association.

Thursday, *January 7th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Washington, Vermont, County Medical Society (annual—Montpelier).

Friday, *January 8th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society; German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.

Saturday, *January 9th:* Obstetrical Society of Boston (private).

OBITUARY NOTES.

Karl Heitzmann, M. D.—Dr. Karl Heitzmann, of New York, died in Rome on December 6th, after a lingering illness. He was a graduate of the University of Vienna and became noted early in life for his beautiful anatomical drawings. He came to New York about twenty years ago with the intention of practising dermatology as a specialty. Before long, however, he became engrossed with microscopy and soon acquired fame as a teacher of histology.

Births, Marriages, and Deaths.

Married.

Banks—Davey.—In Whitby, Ontario, Canada, on Wednesday, December 23d, Dr. Charles Wesley Banks, of Port Jervis, N. Y., and Miss E. A. Winifred Davey.

Fain — Clark. — In Yorkville, South Carolina, on Wednesday, December 23d, Dr. F. W. Fain, of Chattanooga, Tennessee, and Miss Mary Y. Clark.

Jordan—Sharpe.—In Birmingham, Alabama, on Monday, December 21st, Dr. W. M. Jordan, of the United States Army, and Miss Augusta Sharpe.

Luse—Day.—In Deasonville, Mississippi, on Wednesday, December 16th, Dr. S. D. Luse and Miss Josie Day.

Smith—Hawkins.—In Jamesport, N. Y., on Thursday, December 24th, Dr. Walter D. Smith, of Riverhead, N. Y., and Miss Aneta Hawkins.

Warren—Seymour.—In Rochester, N. Y., on Tuesday, December 22d, Dr. Henry J. Warren and Miss Lillian E. Seymour.

Young—Urell.—In Wickford, Rhode Island, on Monday, December 21st, Dr. E. E. Young and Miss Mamie Urell.

Died.

Berry.—In Pasadena, California, on Monday, December 21st, Dr. William B. Berry.

Churchill.—In Utica, N. Y., on Monday, December 28th, Dr. Alonzo Churchill, aged eighty-five years.

Dwight.—In Wedgefield, South Carolina, on Thursday, December 10th, Samuel Jamison, infant son of Dr. Francis Marion Dwight.

Flynn.—In New York, on Saturday, December 26th, Mrs. Martha Flynn, wife of Dr. James W. Flynn.

Rider.—In Rochester, N. Y., on Monday, December 21st, Mrs. Delia Wheelock Rider, wife of Dr. Charles E. Rider.

Swords.—In Morrow, Louisiana, on Wednesday, December 23d, Dr. N. W. Swords, of Lecompte, Louisiana.

WALLACE.—In Brooklyn, on Tuesday, December 22d, Dr. William Wallace, in the sixty-second year of his age.

Letters to the Editor.

THE ACTION OF HYOSCYAMINE IN PARALYSIS AGITANS.

905 PULLMAN BUILDING, CHICAGO, *December 23, 1896.*

To the Editor of the New York Medical Journal:

SIR: I desire, through your columns, to call the attention of your readers to the action of hyoscyamine in paralysis agitans, hoping that it may suggest to some of your readers a solution as to the causes of this malady, the ætiology of which is at present very obscure.

CASE I.—A Boston clergyman, sixty-five years old, first seen in January, 1891. Shaking of the head and right upper and lower extremities had continued for a period of four years, gradually increasing in severity.

I used a solution of hydrobromide of hyoscyamine, two grains to the ounce of water. This was dropped into each eye. In twenty minutes the shaking of the upper and lower extremities and head had entirely ceased. At the end of three quarters of an hour there was such a general relaxation that the patient was unable to rise from the chair. The intelligence did not seem to be disturbed, but the organs of speech were very much interfered with, so that it was difficult for the patient to talk. I anxiously watched my patient, sitting and talking with him for a period of two hours, at the end of which time he was able to get up from his chair and walk again. At the end of three hours there was no impediment to the speech and the shaking had not returned. At the end of about six hours the patient told me the symptoms gradually began to present themselves again.

The following day I reduced my solution to one half the strength, one grain to the ounce. This did not interfere with the locomotion or the power of speech, but again put the shaking in abeyance. I followed this case up for a month, during which time the paralysis agitans was kept under almost complete control by instilling a drop into each eye morning and evening, using a solution of the strength of one grain to the ounce.

CASE II.—A farmer, sixty years old, was seen in 1892. He had suffered with paralysis agitans for twenty years. No lesions were present to which I could attribute any reflex action. In this case I started with hyoscyamine, one grain to the ounce. In thirty minutes the shaking had almost entirely ceased, and the patient remained quiet during the day. A return of the symptoms came the following morning, but they were not so severe as usual. I reduced my solution to half a grain to the ounce, and advised its use three times daily.

By following this treatment this case of paralysis agitans was kept entirely under control for a period of about two months, at which time I lost sight of the case.

CASE III.—An unmarried lady, aged forty-five years, first seen in May, 1893. In this case there were some strong evidences of tabes dorsalis with slight curvature in the dorsal region of the spine. The shaking was general and most torturing. A solution of hyoscyamine hydrobromide, one grain to the ounce, reduced the shaking to a minimum, and gave almost perfect relief. In this case this seems to have been the only remedy that has ever affected the patient, and for a period of three years she has depended upon it. There has been no necessity to increase the dose, and during all of this time there has been no period in which she could do without the hyoscyamine without a return of the violent shaking.

As to its action in these cases, I defer to the opinions of others. I myself hardly believe it can be due to the action of the drug after it has been absorbed into the circulation, for the amount so taken in from one small drop in each eye, accounting for the amount washed away by lacrymation, would not be over one four-hundred-and-eightieth of a grain, whereas the administration of one two-hundredth of a grain by the mouth will not produce any like effect.

This thought suggests itself to me, that perhaps the reason for the marked effect of such a small amount of hyoscyamine in the eye is possibly the fact that its local application is in close proximity to the cause of some reflex disturbance through the visual and other allied centres.

CHALMER PRENTICE, M. D.

AMBLYOPIA EX ANOPSIA.

To the Editor of the New York Medical Journal:

SIR: I recently read an article by a leading oculist of your city in which he expresses the opinion that little can be done to recover vision of an eye lost from nonuse. With all due respect for his vast experience I can not agree with him in his conclusions. I am glad to be able to add to my small number of cases a typical one by Dr. William S. Little, of Philadelphia, reported in the *American Journal of the Medical Sciences* for April, 1881, of a patient, thirty-three years old, with R. E. myopia, vitreous opacity, and divergent strabismus, vision reduced to counting fingers, in which an injury to the left eye reduced its vision to perception of light. The forced use of the amblyopic eye brought its vision in a few months up to $\frac{15}{15}$. In the following cases the appearance of the defective eye, except in Case II, was normal in every respect, even to ophthalmoscopic appearances.

CASE I.—Miss A. B., aged thirteen, convergent strabismus of about 30°. Vision, R. E., ability to count fingers at three feet; V. L. E., normal after two tenotomies of the interni and advancement of the rectus externus and correction of refraction by a + 3·50 D. c. 90°, vision $\frac{6}{200}$; after exercise of R. E. by binding up the left and using the right eye for five minutes several times a day for a period of six months, vision, R. E., $\frac{20}{40}$, and ability to read Sn. 6 slowly. Exercise to be continued.

CASE II.—L. B., a man twenty-five years old. Right eye defective since childhood. V. R. E., $\frac{4}{200}$. V. L. E. normal. Convergent strabismus, 15°. Operated by tenotomy of the rectus internus. Result satisfactory after three months of exercise with — 7½ D. s. glass. V. R. E., $\frac{20}{100}$. As the patient passed from sight, I do not know whether the improvement continued or not.

CASE III.—Miss M. B. Convergent strabismus, 30°. Vision, R. E., $\frac{15}{15}$; L. E., $\frac{10}{200}$, but only lasting an instant. Tenotomy of both interni and tucking of left externus with parallelism, and after correcting with + 2 D. s. $\bigcirc$ + ½ 90 three months of exercise with a blinder on the right eye, vision, L. E., $\frac{15}{40}$, with ability to hold vision on an object. She says she can notice many things with the left eye that formerly she could not distinguish, such as the pattern of wall paper, the face of a clock, etc.

CASE IV.—Mrs. P. E. McE., aged thirty-eight.

Eyes parallel. V. R. E. w. $+ 2\frac{1}{2} \bigcirc + 2{\cdot}75$ D. c. 90 $\frac{15}{200}$; V. L. E. w. $+ 2$ D. S. $\bigcirc + 0{\cdot}75$ 90 $\frac{15}{15}$. After six weeks' exercise by covering the left eye several times a day, V. R. E. $\frac{15}{40}$, and she can make out many letters in Snellen No. 6, and can now distinguish all colors with the right eye which she never could do. She has been taking strychnine and phosphoric acid, and there is a strong probability of still further increasing vision in right eye.

W. F. Conners, M. D.

SOME NEURAL DESCRIPTIVE TERMS.

Ithaca, N. Y., *December 19, 1896.*

To the Editor of the New York Medical Journal:

Sir: In a recent circular asking the opinions of experts as to the prevailing and preferred usage of anatomical and neurological terms in behalf of the projected *Dictionary of Philosophy and Psychology*, Dr. C. L. Herrick mentions certain terms and principles which have been either proposed or adopted by me.

But for the request to "respond as early as possible" I should suggest that replies be either delayed or regarded as provisional until after the appearance of my paper, Neural Terms, International and National (*Journal of Comparative Neurology*, vi, pp. 216–340, December, 1896), wherein the general subject is discussed at length, and in parallel columns are given the neuronyms adopted by the Anatomische Gesellschaft in 1895 and those now preferred by me. But for the remoteness of Dr. Herrick's present address the following comments would be submitted to him first.

3 (*b*). For the part now called by the Gesellschaft *substantia perforata lateralis*, I formerly proposed *præperforata*, but since 1889 have employed *præcribrum*.

4 (*e*). *Metencephalon*, as employed in the last three editions of "Quain," and adopted by me in 1881, designates the last definitive encephalic segment—*i. e.*, between the cerebellar segment (our epencephalon) and the myelon, or spinal cord. As given in the circular it has two other usages—viz., either for the cerebellar segment alone (His), or for both regions (some authors). The encephalic segments will form the subject of a paper at the coming meeting of the Association of American Anatomists.

(*g*) *Metencœle* is doubtless a misprint for *metacœle*. The Latin (international) forms are *metacœlia* and *mesocœlia;* the national English forms *metacele* and *mesocele*.

(*j*) As to *neuron* (proposed by me in 1884 as a mononym for *axis cerebro-spinalis*), see *Reference Handbook*, ix, 100, and *Proceedings Assoc. Amer. Anat.*, 1895, 44, 45. Indirect indorsement of it is contained in such compounds as *neuromere, neurenteric*, etc. In like manner *myelencephalon* (for either the entire cerebro-spinal axis or the last encephalic segment) embodies indirect indorsement of *myelon* for *medulla spinalis*.

As to *cephalic* and *caudal, cephalad* and *caudad*, during an experience of sixteen years no actual instance of misapprehension has been observed. But since they evidently are not acceptable to some, might not the increasing employment of *præ* and *post* in composition, with the force of adjectives, justify taking these prepositions as the bases of adjectives—viz., *prævalis, postalis;* Eng., *præval* and *postal;* adverbs, *præad* and *postad?* As mere vocables, the last two are no more objectionable than *quoad*. Classic precedents for the derivation of adjectives from prepositions or adverbs are *contrarius, extraneus, proprius, crastinus, pristinus, interior, supernus*, and ἀνώτερος. Burt G. Wilder, M. D.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of October 7, 1896.

(*Concluded from volume lxiv, page 787.*)

The President, Dr. Lucius W. Hotchkiss, in the Chair.

Some Unusual Cases of Inflammation of the Appendix Vermiformis. Three Cases of Suprapubic Hysterectomy.—Dr. C. C. Barrows presented a report of these cases. (See page 7.)

Dr. J. W. S. Gouley said, regarding the case of tubal pregnancy, that it was not necessary that any part of the fœtal remains should be found. It was very common on the death of the embryo for it to be destroyed and dissolved. There were other evidences of pregnancy besides the finding of the embryo.

Dr. Robert T. Morris said, regarding the case in which pus had emptied through the appendix into a pelvic abscess, that it called to mind the early observations of Albers. He had explained the perforations that he had found in appendices on post-mortem examinations by supposing that the pus had found its way through the appendix into the bowel. Dr. Morris said that he believed, with Dr. Barrows, that where there was distinct evidence of infection of the appendix, with destructive involvement of the various structures, it was the wiser plan to remove the appendix. When, however, he found a simple hypertrophy, or an appendix involved in adhesions, and, perhaps, tense with interstitial serous exudate, he opposed the removal of the appendix. He took the position that the appendix should not be removed unless there was evidence of distinct infection of this organ, for the reason that there was always at least slight danger in making the opening into the bowel. Some years ago there had been a number of sharp arguments regarding the advisability of operating in the interval between the attacks of perityphlitis, and he had taken the ground that we should operate in all cases in the interval unless there was some very decided contraindication. At that time his attention had been directed to two well-known cases in which the patients had died after such operations, and where there had been every prospect of a good recovery. Post-morten examination in these cases had revealed a perforation at the site of the ligation of the stump. He had accordingly made a study of this subject, and had learned that the stump of the appendix could not be ligated like an artery, because on the proximal side there was septic fluid—the contents of the cæcum. On the other side there was often septic fluid also. The ligature produced compression anæmia at that point, and the part subjected to such anæmia was unable to withstand the attacks of bacteria because the so-called phagocytes were unable, owing to the obstructed circulation, to cope with the bacteria. In an artery there was on one side an aseptic fluid—the blood serum—which was destructive to the bacteria, and on the other side the region of compression anæmia was pretty well protected against bacterial invasion. For these reasons he believed the method of inverting the stump of the appendix should be employed in cases of removal of the appendix, wherever this was possible. Several methods of this kind had been introduced, and had been quite successful in practice. In the cases in which it was impossible to invert the stump or employ the Lembert suture, he thought it wise to bring the cæcum to the surface and suture it to the external wound in the muscles, so that if bacteria should invade any region subjected to compression anæmia the cæcal contents would escape externally. Where we could neither bury the stump nor bring the cæcum to the surface we should endeavor to wall off the tract with aristol or anything which would give a lymph coagulum in the vicinity. We should then employ some small drainage device—something small enough to avoid shock. He considered this matter of the treatment of the stump one of the most important details in the entire subject of the treatment of the infected appendix.

Dr. A. Brothers said, regarding extra-uterine pregnancy, that he had seen four cases, in which one patient had been treated without operation, and the other three surgically. The one treated without operation had probably been the subject of an early extra-uterine pregnancy of the tubal or interstitial variety. Death of the ovum had been accomplished and absorption hastened in this instance by the use of electricity. In the second case—also tubal pregnancy—the ectopic gestation sac had been ruptured, and the ovum had escaped into the general peritoneal cavity. This case he had reported to the society last year, and had called attention to the fact that although the abdominal cavity had been full of blood, there had been nothing in the pulse to indicate this condition. The third case had also been one of early ectopic gestation which had ruptured into the fold of the broad ligament. In this case he had operated through the vagina, cleaning out the clots, and draining. The patient at the present time was still under treatment, but was making good progress toward recovery. All the patients had done well. The speaker asked Dr. Barrows if he did not consider it advisable, in cases of hæmatocele due to hæmorrhage in the folds of the broad ligament, to leave the case alone, or else operate through the vagina.

Dr. Barrows said that he had avoided dwelling too much on the technics of the operation for the removal of the appendix vermiformis because he did not wish to lead the discussion away from the principal point at issue—namely, the route of approach in intrapelvic work. Some two years ago the wonderful results obtained by Péan and others had encouraged him to follow the vaginal route. After a very extensive experience with this method he was now of the opinion that it had not the advantages it had been first supposed to possess. It was frequently impossible for the operator to foresee or meet successfully the complications that might arise in these cases when approached by the vagina; hence, unless absolutely certain regarding the diagnosis, he would continue to approach in these cases by the abdominal route, as heretofore. He predicted that this would be the position taken by many other operators in the near future.

In answer to the question asked by Dr. Brothers, he said that if he felt sure that hæmorrhage occurred in the broad ligament only, he would leave it alone; but it was difficult to say if hæmorrhage ceased and really occupied this situation. He had more than once seen at operation a hæmorrhage held in abeyance for a time by peritoneal adhesions; in all probability if operation was delayed a short time the adhesions would rupture, and the hæmorrhage would return.

Gaseous Distention of the Gall Bladder.—Dr. W. J. Chandler, of South Orange, N. J., related the following history of a case:

Joseph Fratili, an Italian, aged forty-seven years, had been admitted to Orange Memorial Hospital at 8.30 p. m., Sunday, September 27, 1896.

The patient could speak but little English and had no friends. His previous history was therefore rather imperfect. As nearly as could be made out, he had been perfectly well up to noon of Friday, September 25th, when he had been taken with violent pain in the abdomen. The pain had continued, and had been accompanied by frequent vomiting during the next forty-eight hours. On admission, his temperature had been 101° F.; there had been great tenderness in the right lumbar and umbilical regions; the face was anxious; nausea and vomiting were present, the ejected matter being a greenish fluid. The abdomen was distended, but there was no fluctuation, no tumefaction, or any decided dullness in the right lumbar region. High enemata and hot poultices had been ordered. On Monday, September 28th, at 10 a. m., the pulse was 88, respiration 28, and temperature 99.8°. There were the same general symptoms, but no fæcal matter in the discharges. He was ordered ten grains of calomel, and the poultices and enemata were continued.

At 6 p. m. the temperature was normal; the pulse 88, and respiration 28. He slept the greater part of the afternoon. There had been at this time decided swelling and dullness just below the free border of the ribs, on the right side, near the median line. The tenderness here was greater than elsewhere.

At 11 p. m. some flakes of fæcal matter were found in the discharged enemata.

At 10 a. m. Tuesday, September 29th, there was occasional hiccough, and the vomiting and pain still continued. No movement had been produced by the calomel.

At 3.30 p. m. an exploratory laparotomy had been done. The ascending colon had been constricted in its middle third by thick deposits of lymph in the omentum, which had been firmly bound to the large intestine and to the posterior and lateral abdominal walls. The small intestines had been distended with gas and congested. No intussusception had been observed. The gall bladder had been greatly distended and adherent to the transverse colon. No calculus could be felt in the cystic or common duct.

The constricting bands of omentum had been ligated and divided, thus apparently relieving the obstruction. But the patient's condition at this point had become so alarming that it had been decided not to interfere with the distended gall bladder. The operation had been speedily terminated and the patient put to bed. As the influence of the anæsthetic had passed off he had become very restless and insisted on getting up. At times he had been violent and attempted to bite the attendants. It had finally been necessary to tie him in bed.

The radial pulse had ceased before the operation had been finished, and had scarcely been perceptible at any time afterward.

At 6 a. m. on Wednesday, September 30th, he had had a severe chill, and died an hour later. The autopsy had been made six hours after death. On opening the abdomen, almost the first thing that had presented itself had been an intussusception of the small intestine. There had been no special constriction, congestion, or evidence of strangulation about it, and it had been so loosely telescoped that it had fallen apart when it had been removed, although great care had been used to prevent this occurrence. The ascending colon had been somewhat narrowed in its middle third, and had been held down by deposits of lymph. It had been, however, pervious to air and fluids. The kidneys and spleen had been normal except for intense congestion. The gall bladder had been removed with the liver. It had been very tense and had had an apparent capacity of half a pint. It had been punctured, but instead of a gush of fluid there had been only a puff of gas. There had not been more than a tablespoonful of a thick, brownish-yellow bile, the distention having been mainly gaseous. When the gall bladder had been opened and washed off, spots of ulceration had been found. The duct had been swollen and closed. No calculus had been found.

The President asked if there had been any foul odor about the gall bladder, indicating gangrene.

Dr. Chandler replied in the negative. The appearance of the wall of the gall bladder, he said, had been of post-mortem origin.

Dr. E. Le Fevre said that two years ago he had read of a case in which death had been caused by rupture of the gall bladder, yet no bile had been found. The history had been similar to the one just presented. The reporter of that case had referred to the fact that gaseous distention of the gall bladder and its relation to ordinary biliary colic had been previously discussed. The conclusion had been that these cases had been due to the action of bacteria which had reached the gall bladder from the common duct, and had there acted upon the mucus which had been poured out after their entrance. Marsh gas and hydrogen were said to have been produced as a result of this action of the bacteria. A similar action had been observed in the intestine in the presence of the same bacteria. In the same article it had also been stated that no reason had been found for the fact that these same micro-organisms would produce alcoholic fermentation in the stomach, an odorless gas in the intestine, and yet be present in the gall bladder without such a result. It was probable that there had been a secondary change in the bile ducts and in the mucus.

Foreign Bodies in the Bladder.—Dr. Gouley presented two specimens of foreign bodies which had been removed from the bladder by way of the urethra. The first had been a cylinder, a quarter of an inch in diameter and three inches in length, punched out of a raw white potato by pressing it against the sharpened nozzle of a tin funnel. The patient, C. J., aged twenty-six years, had used this cylinder as an aid to masturbation and had allowed it to slip into the bladder, on the 3d of August, 1896, three days prior to its extraction, when it had already caused some vesical irritation, as evinced by unduly frequent micturition and the presence of pus in the urine. The extraction of this foreign body had been effected in two minutes by the use of a sort of catheter forceps, devised by Heurteloup, for the removal of calculous fragments after lithotrity. With this forceps, which had been the only available instrument at hand, the potato cylinder had been caught at one of its extremities and just enough pressure had been applied to the soft structure to hold it without crushing and severing the part seized from the rest of the cylinder, which had been coiled, as seen in the vessel in which it is preserved, and coated with slimy pus and phosphatic crystals. There had been no hæmorrhage and no untoward outcome. The beginning cystitis had aborted and the patient had been dismissed with injunctions to mend his ways. Many different and wonderful substances had made their way into the human bladder, but this bit of potato appeared to be the most novel device of a degraded mind for the gratification of perverted desires.

The second specimen had been a fragment of an India-rubber catheter three inches long, which had been removed, also by way of the urethra, from a patient sixty-five years of age who had been in the habit of catheterizing himself on account of prostatic obstruction to urination. After having withdrawn the catheter at ten o'clock in the morning of September 8, 1896, he had missed several inches of the instrument and had become conscious of its fracture in the bladder. At that time he had been in a suburban place and had sent for a physician who had advised a cutting operation for the removal of the foreign body. Dreading such an operation, he had telephoned to his family physician, Dr. Robert A. Murray, who had condemned the proposed operation, and summoned the sufferer to town, where he had called on Dr. Gouley at three o'clock in the afternoon. The fragment of catheter had been removed in a minute and a half by means of an instrument of small calibre originally devised by Dr. Mercier for the extraction of calculous fragments from the bladder. Not a drop of blood had flowed, and no vesical irritation had ensued.

Dr. Gouley exhibited a number of instruments that had been devised for the purpose of removing catheters and similar foreign bodies from the bladder.

Meeting of November 4, 1896.

The President, Dr. Lucius W. Hotchkiss, in the Chair.

Extirpation of the Tongue for Epithelioma, by Kocher's Method.—Dr. A. B. Johnson presented a man, forty-two years of age, a laborer, who had been admitted to the Roosevelt Hospital on October 5, 1896. The family history had been negative, and there had been no history of syphilis or tuberculosis. He had been a hard drinker, and had smoked a pipe a good deal. One year ago, a small papule had appeared on the right border of the tongue, midway between the base and the tip. After a time the patient had begun to suffer from darting pains in the growth. Five months ago chewing and speaking had become painful, and since then the pain and discomfort had increased rapidly in severity. On admission to the hospital he had been found to be fairly nourished, but his circulation had been poor. His tongue had been coated, and there had been many carious teeth. On the right side of the tongue had been a hard growth extending from the base of the tongue well forward toward the tip. It had been elevated a fourth of an inch above the level of the tongue, and on a portion of its surface had been a shallow ulcer, covered with a thin slough. The growth had crossed the median line near the base of the tongue, and to some extent had involved the floor of the mouth, the right anterior pillar of the fauces, and the tonsil. The movements of the tongue had been much restricted. No enlarged lymph glands had been felt in the submaxillary region. On October 5, 1896, the patient had been operated upon under ether, a preliminary tracheotomy having been performed to allow of the administration of ether through the tracheal opening. Kocher's incision for the removal of the tongue had been made, and the contents of the right submaxillary triangle, together with the tongue, had been removed. Two slightly enlarged glands had been found just beneath the angle of the jaw, and these had been removed. The right lingual artery had been tied in the wound. A large sponge had then been inserted in the pharynx, and the floor of the mouth opened. The tongue had been removed with scissors, except a small portion on the left side, about two inches long and three fourths of an inch wide. All of the right tonsil and a portion of the anterior pillar of the fauces on that side had been cut away. The pharyngeal sponge had then been removed, and the cavity of the mouth packed with iodoform gauze. A strand of gauze had been passed from the floor of the mouth through the wound for drainage, and the remainder of the wound closed by sutures. Rectal feeding had been practised for four days, after which the tracheotomy tube had been removed, and the patient had been fed by the stomach tube passed down the œsophagus. On the fifth day the patient had been allowed up for a time. On the ninth day he had begun to take liquid food by the mouth, and by November 1st the external wound had been practically closed.

The speaker said that the case was presented, partly because of the general interest of these cases, and partly because at first he had felt that it was hardly worth while to remove the growth at all. He was now glad that he had done so, for the patient was quite comfortable. As yet there was no sign of recurrence. The patient was entirely free from pain. His speech could easily be understood, and he was able to swallow without difficulty. The speaker wished to call the attention of the members of the society, especially those who were not surgeons, to the remarkable way in which the small portion of tongue left behind adapted itself to the new conditions in these cases. It had rotated into the median line, become adherent to the floor of the mouth, was movable, and formed a small but useful organ. Dr. Johnson then exhibited under the microscope sections of the growth; they showed it to be a typical epithelioma.

Choledocho-lithotomy.—Dr. JOHNSON also presented a young woman, twenty-seven years of age, who had been admitted to the Roosevelt Hospital on October 1, 1896. She had given a history of dyspepsia and constipation. Two years ago she had been ill with pain in the epigastrium, vomiting of greenish material, flatulence, and jaundice. The pain had subsided after two weeks, but the jaundice had continued. A year after this she had had another similar, but more severe, attack, beginning with a chill and causing much prostration. Her present attack had begun six weeks before admission, with a severe chill and pain in the right hypochondrium and epigastrium. She had suffered from frequent vomiting, anorexia, profuse sweating, and increased jaundice. There had been some tenderness over the upper portion of the abdomen on the right side. One week before admission she had had another chill, with very severe pain, frequent vomiting, and light-colored stools. On admission she had been somewhat emaciated, moderately jaundiced, slightly anæmic. The abdomen had been yielding, and there had been no evidence of tumor in the region of the gall bladder. At the operation a vertical incision had been made from the tip of the tenth costal cartilage downward for four inches. On opening the peritonæum, the edge of the liver and gall bladder had been exposed. The gall bladder had been found moderately distended, and surrounded by adhesions to the abdominal wall and intestine, and these had been separated. Palpation of the gall bladder had not then revealed the presence of stones. All the viscera in the neighborhood of the wound had been more or less adherent, but by following the gall bladder backward and to the right with the finger, a hard, rounded body had been felt, about an inch by an inch and a quarter in diameter. It had appeared to be situated in the common or cystic duct, close to the upper border of the duodenum. The wound had been enlarged at its upper angle by a partial division of the rectus muscle, and the hard body had been seized between the thumb and forefinger of the left hand. It could be moved a short distance in the direction of the gall bladder, but not toward the intestine. The tissues had therefore been incised over the duct, and the gallstone removed. Some bile had escaped into the peritoneal cavity. The wound had been washed with salt solution and closed with a double row of catgut sutures, a strand of gauze having been inserted for drainage. The highest temperature after the operation had been 100° F., and had occurred on the third day. The sutures had been removed on the eighth day. By the sixth day the jaundice had disappeared, the stools and urine had become normal in color, and she had been entirely free from pain. On October 31st she left the hospital with the wound healed, and apparently in perfect health. So extensive had been the adhesions that the speaker was unable to state what was the exact location of the stone, but it was apparently at the beginning of the cystic duct, compressing the common duct.

Dr. J. W. S. GOULEY said that it was very wise to leave a portion of the tongue, as had been done in the first case. As could be observed, the stump had become adherent to the floor of the mouth and served to keep the larynx forward, thus preventing it from falling backward into the pharynx. It was quite remarkable that such a small portion should enable the man to speak as well as he did. Such an operation, of course, would not have been possible without a preliminary tracheotomy. Our views of cancer and similar growths, Dr. Gouley said, had changed very much in the last twenty years, and it seemed clear to him that the growth in this case had been the result of the constant irritation produced by the rubbing of the tongue against a decayed tooth. The smoking had simply added another element of irritation. Cancers of the lip resulted from the smoking of a clay pipe particularly, as the stem of such a pipe was often short, and became sufficiently heated to cause a slight adhesion of the pipe stem to the epithelium of the lip. On the removal of the pipe a little abrasion resulted, and this frequently repeated process of irritation often led to the development of an epithelioma.

Dr. RUSSEL BELLAMY said that he had had the pleasure of being with Kocher for some time, and had noted a form of artery clamp used by him in his operations about the neck. He exhibited one of these clamps, and stated that it was maintained that the length of the shaft of this instrument caused little interference with the field of operation. Other features were the peculiar jaws, which secured a good hold, and the absence of the usual French lock. He thought the instrument would prove useful in an operation like the one under discussion.

Dr. R. J. CARLISLE asked if there had been any evidence of suppuration in the bile duct in the second case.

Dr. JOHNSON replied in the negative.

Dr. GEORGE W. CRARY asked what had been the effect of the escape of the bile into the peritoneal cavity, and also the quantity of bile that had been poured out.

Dr. JOHNSON replied that nearly a pint must have escaped into the peritoneal cavity, and much to his surprise there had not been the slightest evidence of irritation. He had understood from other surgeons that as long as the bile was free from infection it did not usually give rise to any trouble in the peritoneal cavity.

Referring to the Kocher operation, Dr. Johnson said that it was so much easier than any other operation for total excision of the tongue that he thought the surgeon would always prefer this method. There was no trouble from hæmorrhage, and even when the lingual artery was not tied the hæmorrhage was not especially troublesome, as the parts were kept on the stretch. Moreover, this was about the only operation which provided so perfectly for the removal of all the tissues likely to be diseased. The entire contents of the submaxillary triangle—the lymphatic glands and fat—were removed, and one had perfect access to the floor of the mouth, the pharynx, and the whole tongue. Besides this, the drainage was perfect after the operation. The submaxillary lymph glands on the other side of the neck had not appeared to be enlarged, and no attempt had been made to remove them. In the specimen under the microscope it was evident that the epithelioma proper was sharply separated from the other tissues, and hence he had thought it safe not to invade the other side.

The President asked if Dr. Johnson had noticed that the glands at a distance from the submaxillary triangle were frequently involved. He had observed this in one case in which he had done a Whitehead operation, the recurrence being in the postcervical glands, while those in the submaxillary triangle had been unaffected.

Dr. Johnson said that he had once observed the recurrence take place in a gland very near the bifurcation of the common carotid.

Rupture of the Quadriceps Extensor Treated by Suture.—Dr. George W. Crary presented a man who, on December 28, 1895, had fallen and received an injury to the left knee. A few hours later the swelling had been so great that thorough examination had been impossible. A few days later a simple rupture of the quadriceps extensor femoris had been diagnosticated. The operation of suturing had been performed on January 3, 1896, under ether anæsthesia. A transverse incision had been made above the patella, about five inches long, and over the sulcus between the divided ends of the muscle. The rupture had been found to be about an inch above the upper border of the patella. The cavity of the joint had contained a certain amount of blood clot and serum, and had been washed out with salt solution. The distance between the divided ends of the muscle had been about an inch, and there had been no attempt at repair. The ends of the torn muscle had been brought together by a continuous suture of No. 2 catgut. This had caused a slight folding of the crureus. A few deep sutures and fine silk sutures had sufficed to close the wound without drainage. A plaster-of-Paris dressing, strengthened by a wooden splint, had been applied. The highest temperature after the operation had been 100.5° F. On January 10th a fenestra had been made in the splint over the wound and the dressing removed. The wound had healed perfectly, so the stitches had been removed and a light antiseptic dressing applied. On February 1st the entire dressing had been removed and a lighter plaster splint applied. On February 14th he had been allowed out of bed. The plaster splint had been discarded at the end of nine weeks, and for a few weeks longer he had worn a starch bandage. At present there was almost perfect function of the knee, and within two months after the injury he had been able to go up and down a step-ladder—a good test of the functional result.

Dr. John F. Erdmann asked why Dr. Crary had not adopted the longitudinal incision so often employed in wiring the patella. The advantage was that if subjected to sudden strain it would not give way as the transverse one occasionally did.

Dr. Crary said that while the longitudinal incision might answer for the operation on the patella, it would not give sufficient room, without extensive dissection, in a case like the one he had presented. If a fall had caused a tearing through of the skin, it would almost certainly have caused a secondary rupture of the muscle, and under such circumstances the tearing of the skin would be a secondary matter.

Dr. Erdmann remarked that he had known the skin incision to give way without a breaking of the patella. In one difficult case of secondary fracture of the patella he had not had the slightest trouble in again suturing the patella through the longitudinal incision.

Dr. Crary said that the transverse incision for the patella would be located immediately over the point of greatest tension of the skin, while the transverse incision for suture of a ruptured quadriceps extensor would not be so placed.

Dr. Johnson said that the result obtained in the case presented by Dr. Crary was a remarkably beautiful one—better than any he had before seen.

Report of Two Cases of Prostatectomy.—The President read a paper on this subject. (See page 10.)

Dr. S. Alexander said that he had been much interested in the comparison of the two methods of operating, and he was glad to find that the author of the paper had come to the conclusion that the perineal route was the better. This had been his own opinion for a number of years. In the majority of cases of very large prostate, he did not think the operator would find it desirable to remove the prostate through the perineal incision alone. In his method of performing prostatectomy, suprapubic cystotomy was done so that the entire gland could be brought within reach and completely removed. For purposes of cleanliness and disinfection of the bladder he had found that the suprapubic incision was of great advantage, the tube being left in for five or six days, and all the washing being done through the upper tube. He would like to ask whether the president had made his incision through the mucous membrane of the prostatic urethra.

The President said that his incision had extended through the prostatic urethra, but not through the prostate.

Dr. Alexander, continuing, said that by his method the prostate could be pressed downward so that it would be possible for the operator to shell out the entire gland without opening the prostatic urethra or injuring the mucous membrane of the bladder. He felt confident that this could be done in the majority of cases, and when this was the case, the hæmorrhage was much less, and there was not so much danger of septic infection. He was not prepared to say that the method by the suprapubic route alone should be abandoned in all cases, for, in some instances, it was possible that it might prove superior to the perineal route. It might be of special advantage in moderately enlarged fibrous prostates, but it had so happened that he had not met with cases of prostatic enlargement which he believed could not be removed through the perinæum by the submucous method. Some cases of so-called "bar" at the neck of the bladder were suitable for prostatotomy, but not for prostatectomy. He would be glad to know whether there was any residual urine in the first case, because from what had been said about the difficulty of reaching down into the prostate after it was opened, and the fact that not all of the prostate had been removed, he was inclined to believe that the operation had not been entirely radical. Cases of relapse after prostatectomy were due, in his opinion, to insufficient removal of the enlargement. Where the entire enlargement had been extirpated, we might confidently expect entirely voluntary micturition, but where only portions were removed—particularly in the earlier operations performed after McGill's method—relapse was not infrequent. This was due to the habit of surgeons of tearing away only those portions which seemed at the time to be causing obstruction.

Regarding the mortality of the operation, the speaker said that he felt the death-rate would improve with individual operators as their technics improved, and as the operation was done earlier. So many patients at the present time were operated upon late—as in the case under discussion, where the bladder was septic and the patient exhausted—that the death-rate was sure to be unnecessarily high. In several of these cases he had performed perineal section and drained the bladder for several days prior to the operation. He had found this procedure very satisfactory, and believed it had been the means of reducing the death-rate. The remarks of the reader of the paper regarding castration for prostatic obstruction should be given careful consideration.

Dr. Gouley said that it was now eighteen years since he had introduced to the medical profession in America the method of operating devised by Mercier, of Paris. At that time, every one had been opposed to it, and one surgeon had stated that Dr. Gouley was the only one in this country who performed the operation, and probably would be the only one. In England these operations had been attacked very violently, and only one surgeon in that country had advocated surgery on the prostate. The majority of the Continental surgeons had been opposed to such surgery, although a few of them had operated upon the prostate for cancer—a class of cases for which Mercier had never intended his operation. Mercier had been very successful in prostatotomy for "valvules" at the neck of the bladder. He had distinguished two kinds of "valvules"—viz.: (1) The muscular, crescentic valvules made up of mucous membrane and a few bands of muscular tissue; and (2) the prostatic valvules, which were really enlargements of the posterior third of the lower isthmus of the prostate. This operator had been quite successful when the enlargement had been confined to the posterior third of the lower isthmus of the prostate, and he had done over four hundred such operations. Dr. Gouley said that in 1878 he had performed both these operations in this country, and he believed that he had given them the names "prostatotomy" and "prostatectomy"; and although not very good names, they had been quite generally adopted. Those who thought any prostate could be enucleated with impunity would be disappointed if they attempted it. The so-called hard prostate could not be enucleated. At his suggestion, Dr. Alexander had tried it on the cadaver, and had given it up. The operation of enucleation was applicable only to the large, soft prostate—that which consisted simply of dilated acini. He had succeeded in removing the greater part of a prostate containing eighteen concretions. He believed the operation devised by Dr. Alexander was destined to replace Dr. McGill's operation and any suprapubic operation. It was impossible to remove a very large prostate by either the suprapubic or the perineal method alone. It was probable that hereafter very little would be heard of McGill's operation.

Regarding the president's operation, Dr. Gouley said that it had been very successful in view of the involvement of the bladder. If there was reason to suppose that the kidneys were involved, the operation should not be performed; it was better in such cases to depend upon the suprapubic incision for drainage alone. He feared that too many of these operations would be undertaken unless the young surgeons took into consideration the great danger of pyelonephritis, which might already exist, and which would then be rendered acute by any extensive surgical operation. In such cases, masterly inactivity was far better than radicalism.

The President said that in the first case it had seemed to him that the prostate had been pretty thoroughly removed. The fact that the urethral distance had diminished two inches from just before the operation to the time when the patient had left the hospital would seem to indicate that there had been considerable diminution in the bulk of the prostate. In both of the cases he had started to do a cystotomy alone for the purpose of draining the bladder, but on opening the bladder he had found the prostate so fairly accessible that he had been tempted to try its removal. The operation devised by Dr. Alexander seemed to him an extremely feasible one, although he had never performed it. He had, however, employed the perineal incision of Dittel in cases of abscess of the prostate, and had been very favorably impressed with it as a means of approaching the prostate gland. Judging from his limited experience, he thought the prostate might often be enucleated through the perineal incision alone without the necessity of a suprapubic cut.

Miscellany.

The Bureau of Animal Industry and Vivisection in the District of Columbia.—The United States Department of Agriculture is properly issuing printed copies of a letter written last May to the chairman of the Senate Committee on the District of Columbia by the acting secretary, Dr. Charles W. Dabney, Jr. The letter ought to go far toward checking the influence of antivivisection fanatics. It is as follows:

I have the honor to invite your attention to certain provisions of the bill S. 1552 and of a substitute which I am informed the Committee on the District of Columbia has decided to report favorably. The bill is entitled "A bill for the further prevention of cruelty to animals in the District of Columbia." The principal purpose of the bill as disclosed by its several sections is to restrict and prohibit those experiments upon animals without which it is impossible to obtain the facts required for the advancement of the biological sciences, and particularly for understanding the nature of disease and discovering the best means for its prevention and cure. As the Bureau of Animal Industry of this department is charged by law with the duty of investigating and controlling animal diseases, and as it has made and is making more extensive investigations of said diseases than any other institution in the United States, the work of said bureau would be directly and seriously affected by legislation such as is proposed in this measure. The bill, while ostensibly local legislation, would affect principally the work of the executive departments, and more particularly the scientific investigations of the Department of Agriculture.

1. The bill provides that hereafter no person shall perform on a living animal any experiment calculated to give pain to such animal, and it makes any person guilty of an offense who performs or takes part in any such experiment which in any way contravenes the provisions of this bill, and for such offense, if the first, he is liable to the excessive penalty of $150 fine, or if the second offense he is liable to a fine of $300 or to imprisonment for a period not exceeding six months. These extreme penalties would discourage investigators, they would cause hesitation and delay in the performance of necessary experiments, for no one would enter upon a series of researches until he had satisfied himself that he could carry them through without even a technical violation of the act, and that he could satisfy even unfriendly inspectors that there was no technical violation. Such hesitation and delay is fatal to experimental work of the character performed in this department. It often requires months, sometimes years, to find an outbreak of disease of the right type, and with the affected animals at the proper stage, to yield results to the investigator. If it is a contagious disease, the experimental animals must be exposed to or inoculated with the liquid excretions or tissues of the affected individual; and this must be done under a variety of conditions. Such material is perishable and when found must be used at once; the experiments for which it is suitable must be immediately planned and executed, otherwise the valuable material is lost; hence the desirability of leaving investigators free from unnecessary restrictions and of encouraging them to their best efforts by recognizing their valuable contributions to the cause of humanity. The effect of this section would be to place experimentation upon animals under the ban of the law, to put a stigma upon it, and to cause those engaged in such researches to expend a large part of their energy and ability to avoid infraction of the numerous restrictions.

2. It is provided in section 2, paragraph a, that such experiment must be performed with a view to the advancement *by new discovery* of physiological knowledge, or of knowledge which will be useful for saving or prolonging life or alleviating suffering. That is to say, it forbids all experimentation to confirm the results obtained by others, or to determine whether their results are exactly accurate, or whether such conclusions apply under the conditions which obtain in this country. This provision at once prohibits a large part of the necessary experimental work of this department and would seriously cripple the remainder. Every experiment becomes an offense which does not lead to an immediate practical result. It so happens, however, that no one experiment can give such results except in extraordinary cases. Science is built up by degrees. We progress a step at a time, and many experiments must be made to determine the facts in the case before we can foresee the results. If the experimenter must stop to consider whether he can demonstrate to the satisfaction of a court that each individual experiment was "performed with a view to the advancement by new discovery of physiological knowledge, or of knowledge which will be useful for saving or prolonging life or alleviating suffering," it is not likely that he will accomplish much by his work.

3. "The experiment must be performed by a person holding such license from the Commissioners of the District of Columbia as in this act mentioned." The substitute bill adds the words "or by a duly authorized medical officer of the government of the United States or of the District of Columbia." The provision in each bill is objectionable. The first-mentioned bill makes the work of this department dependent upon the action of the Commissioners of the District of Columbia and would allow these commissioners to dictate as to the persons who should be employed in this scientific work. The substitute bill allows experiments to be performed by a duly authorized medical officer of the government of the United States without license. This would still exclude a large proportion of our men engaged in experimental work, who, while graduates in science, and perfectly competent, could not be considered medical officers. It appears from an examination of the records that some of our best men in the past would not have been allowed to serve under this provision.

4. The bill provides that "notwithstanding anything in this act contained, no experiment calculated to give pain shall be performed on a dog or cat, except upon such certificate being given as in this act mentioned, stating, in addition to the statements hereinbefore required to be made in such certificate, that for reasons specified in the certificate the object of the experiment will be necessarily frustrated unless it is performed on an animal similar in constitution and habits to a cat or dog, and no other animal is available for such experiment; and an experiment calculated to give pain shall not be performed on any horse, ass, or mule, except on such certificate being given as in this act mentioned; that the object of the experiment will be necessarily frustrated unless it is performed on a horse, ass, or mule, and that no other animal is available for such purpose."

Section 7 provides "that any application for a license under this act, and for a certificate to be given as in this act mentioned, must be signed by three physicians duly licensed to practise and actually engaged in practising medicine in the District of Columbia, and also by a professor of physiology, medicine, anatomy, medical jurisprudence, materia medica, or surgery in the medical department of any duly established reliable school or college in the District of Columbia: *Provided*, That when any person applying for a certificate under this act is himself one of the persons authorized to sign such certificate, the signature of some other of such persons shall be substituted for the signature of the applicant. . . .

"A copy of any certificate under this section shall be forwarded by the applicant to the Commissioners of the District, but shall not be available until one week after a copy has been so forwarded.

"The Commissioners of the District may at any time disallow or suspend any certificate given under this section."

These provisions prevent the use of five species of animals in experiments, except upon special certificate being given. The form of this certificate and the manner in which it is to be obtained or given are indefinite, and it can not be clearly understood from the language of the bill what kind of a certificate is intended. The fact that an application for a certificate must be signed by three physicians, and by a professor in a medical college, makes the work of an Executive Department of the United States Government dependent again in this instance not only upon the Commissioners of the District but upon the action of individuals in the District of Columbia who have no connection either with the United States Government or the District Government. Such a provision is, I believe, unprecedented in legislation affecting the executive departments.

The language quoted makes it plain that a certificate must be given for each experiment, or certainly for each series of experiments made upon any of the animals mentioned. As these certificates are not available until one week after a copy has been forwarded to the Commissioners of the District, experiments upon these animals are practically prohibited. As before explained, experiments can not be planned or performed until the material to be used in such experiments is obtained, and such material being perishable, a delay of a week would lead to its total loss, and thus prevent the experiment being carried out. This refers to experiments with contagious diseases or with animal parasites, which are the principal ones conducted under the direction of the Bureau of Animal Industry.

All investigations concerning the diseases of horses, asses, and mules would practically be stopped by the proposed legislation and the testing of horses with mallein to determine if they are affected with glanders would only be possible after a week's delay to obtain a certificate. Glanders is one of the diseases which it is the duty of the Bureau of Animal Industry, in coöperation with the Commissioners of the District of Columbia, to eradicate from the District. If a suspected horse is found it should be tested at once. A delay of a week gives an opportunity for the escape of the animal from supervision, and is under any circumstances a hardship to the owner as well as a peril to the people and horses exposed to the affected animal. Efforts to control contagious diseases must be prompt and vigorous if they are expected to bring success. Such legislation as is proposed in the bills mentioned would make the eradication of glanders impossible.

5. It is provided in section 4 of the substitute bill that a license shall not be granted to any person under the age of twenty-five years, unless he be a graduate from a medical college, duly authorized to practise medicine in the District of Columbia.

This provision effectually excludes from experimentation any graduate in science under twenty-five years of age, unless he is duly authorized to practise medicine in the District of Columbia. It would at once stop some of the experiments now in progress, and if it had been enforced in past years would have prevented a large proportion of our scientific employees from doing this class of work. Taken in connection with paragraph b of section 2, which provides that experiments must be performed by persons holding a license from the Commissioners of the District, or by a duly authorized medical officer of the government of the United States or of the District of Columbia, it is readily seen that young men, graduates in zoology, or in other collateral sciences, could not make experiments even if they were competent and in the service of an executive department of the government.

6. The bill also provides that the Commissioners of the District may direct any person performing such experiments under this act from time to time to make reports to them of the result of such experiments, in such form and with such details as the said commissioners may require. The substitute bill makes this report cover the methods employed as well as the results of the experiments. This provision is objectionable, because it makes the employees of an executive department subject to the directions of the Commissioners of the District in making their reports. It permits reports to be called for before the investigations are completed, and the official work of these experts might be stopped at any time by a demand from the commissioners for a report as to the methods being employed and the results of the experiments.

I would respectfully suggest that it is improper, and not in accordance with precedent, for the employees of an executive department of the government to report directly to the Commissioners of the District. Their report should be made to the head of the department, and if any report is to be made to the commissioners it should be made by, or transmitted through, the head of the department. Even this would be objectionable, as the work of the departments should not in any way be subject to or dependent upon the local authorities.

7. It is provided in section 6 "that the Commissioners of the District shall cause all registered places to be from time to time visited by inspectors, without previous notice, for the purpose of securing compliance with the provisions of this act, and shall appoint and authorize an agent of the Washington Humane Society to make such inspection, and may also appoint such special inspectors as they may think fit, either permanently or temporarily, who may be willing to act as such inspectors gratuitously."

The substitute bill provides "that the President of the United States shall cause all places where experiments on living vertebrate animals are carried on in the District of Columbia to be from time to time visited and inspected, without previous notice, for the purpose of securing compliance with the provisions of this act, and to that end shall appoint four inspectors, who shall serve without compensation, and who shall have authority to visit and inspect the places aforesaid, and who shall report to the President of the United States from time to time the results of their observations therein, which shall be made public by him."

It must be plain that the results of all these limitations and restrictions and of this espionage will be the prevention of scientific research rather than its regulation. As long as this department is directed by Congress to make investigations of animal diseases, and to provide for their suppression and control, the department should be left free to carry on such work in such manner as may seem best to the Secretary of Agriculture in order to attain the end in view. The department must always be under the direction of responsible officers who may be called upon by the President at any time for information, and a board of inspection composed of persons not in the government service and who serve gratuitously is not needed and would not be in the interest of efficient service.

8. An apparent concession is made in section 2, paragraph e, which provides "that in so-called inoculation experiments or tests of drugs or medicines, the anima need not be anæsthetized nor killed afterward, nor in tests of surgical procedure need animals be kept completely anæsthetized during the process of recovery from the surgical operation." This concession is, however apparent rather than real. The investigator remains

subject to all the other limitations of the bill: (1) If not a duly authorized medical officer of the government of the United States or of the District of Columbia, he must first obtain a license (sec. 2, b). (2) His application for a license must be signed by three physicians duly licensed to practise medicine and actually engaged in practising medicine in the District of Columbia, also by a professor of physiology, medicine, anatomy, medical jurisprudence, materia medica, or surgery, in the medical department of any duly established reliable school or college in the District of Columbia (sec. 7). (3) The commissioners may require the place where the experiments are made to be registered (sec. 3). (4) If under twenty-five years of age, and not duly authorized to practise medicine in the District of Columbia, he can not obtain a license (sec. 4). (5) He must, if authorized to experiment at all, confine his experiments to the advancement by *new discovery* of physiological knowledge or of knowledge which will be useful for saving or prolonging life or alleviating suffering (sec. 2, a). (6) If the experiment is to be made upon a dog, cat, horse, ass, or mule, a certificate must be given (it is not specified by whom) stating in addition to certain other statements that for specified reasons the object of the experiment will be necessarily frustrated unless it is performed on an animal similar in constitution to a cat, dog, horse, ass, or mule, and that no other animal is available for such purpose (sec. 2, par. e, 3d part). (7) Any application "for a certificate to be given as in this act mentioned must be signed by three physicians duly licensed to practise and actually engaged in practising medicine in the District of Columbia, and also by a professor of physiology, medicine, anatomy, medical jurisprudence, materia medica, or surgery in the medical department of any duly established reliable school or college in the District of Columbia: *Provided*, That when any person applying for a certificate under this act is himself one of the persons authorized to sign such certificate, the signature of some other of such persons shall be substituted for the signature of the applicant." (8) Such certificate shall not be available until one week after a copy has been forwarded to the Commissioners of the District (sec. 7). (It is not stated to whom the application for this certificate shall be made.) (9) The investigator must hold himself ready to report at any time to the Commissioners of the District both the methods employed and the results of the experiments in such form and with such details as the said commissioners may require (sec. 5). It makes no difference how premature the report may be, or how damaging to the investigator to publish it before the results are completed, there is no recourse. (10) The nvestigator, his animals, methods, and experiments are to be subject to the constant inspection and espionage of four inspectors to be appointed by the President, who shall serve without compensation, and who shall report to the President the results of their observations sec. 6).

It can hardly be supposed that a scientific man could naster all of these requirements and limitations of the aw without embarrassment and injury to his work, or hat he could conduct a series of experiments to a successful issue without contravening some of them and naking himself liable to the extreme penalties provided for such an offense. The assertion that the effect of either the original bill or the substitute will be simply o regulate experiments and prevent abuses is absurd n the light of an analysis of the provisions. The effect will be practically prohibitive, and there is good reason to believe that this is the result aimed at by those who drafted the bills.

It appears that this bill, S. 1552, was formulated by the anti-vivisection committee of the Washington Humane Society (*Annual Report*, 1895, p. 24) and I am informed that a substitute bill has more recently been proposed by the said anti-vivisection committee. An examination of the proposed substitute does not, however, disclose any material modification of the provisions existing in the original bill. Both have evidently been drawn by persons hostile to scientific investigations which must be made through experimentation upon animals. The sentiment of the society which procured the drafting of these bills is well summarized in the report of its president for the year 1894. He said:

"The subject of vivisection [experiments upon animals] has been frequently before your executive committee during the past year, and but one sentiment has been expressed, viz., that of utter abhorrence and condemnation of the inhuman practice which, according to the oft-expressed opinion of the best physicians and surgeons, is of no practical value to science or medicine." (P. 18.)

It is not surprising that people holding such views should endeavor to graft them upon the legislation of the country, and we must bear in mind the fact that those who drafted these bills are hostile to experimentation and desire to abolish rather than to regulate it.

The investigations which the Bureau of Animal Industry has made have been so successful as to attract the attention of the scientific world, and they have required constant experimentation upon animals. Some of these experiments have been painful to the animals operated upon, but they have been in charge of scientific and humane persons who have exerted themselves to prevent any unnecessary suffering. Such experiments which are intended to supply the knowledge required for protecting our domestic animals from disease and for securing a food supply from them uncontaminated by disease, and which also contribute to the prevention and cure of human maladies, are less subject to the charge of cruelty, even though they cause pain, than are the ordinary practices of dishorning, emasculation, branding, and slaughtering, all of which are countenanced for economic reasons and cause more pain than do scientific experiments. So long as we admit that an animal may be caused to suffer the intense pain of castration in order that it may be more economically raised and better suited for the service of man or for the production of edible meat, so long as we permit millions of delicate calves to be burned with a red-hot iron upon their sensitive skins in order that they may be identified, and so long as we admit that animals may be killed by painful processes to supply us with food, it is inconsistent to say that they can not be used in experiments necessary for the advancement of knowledge, the relief of suffering, and the saving of property and life.

The first investigations of this kind which this department was directed by Congress to make related to the diseases of swine, and these investigations have been continued until those diseases which cause the principal losses are well understood and can be controlled by the application of proper measures.

The Bureau of Animal Industry was established principally to avert the great danger which threatened our cattle industry from the existence on our territory of that cattle plague known as the contagious pleuro-pneumonia of bovine animals. Other countries had struggled with it in vain, but it had never up to that time been eradicated from any country in which it had gained a considerable distribution. The nature of the disease and the best methods of controlling it were imperfectly understood. The experiments made here upon animals gave sufficient information, however, to enable those charged with the work to mark out a systematic and scientific plan of operations which led to the complete eradication of the disease in less than five years. Although four years have passed since this work was completed, the predictions of the scientists have been fulfilled to the letter, and no cases of the disease have been found during that time. Previous to this work being undertaken the disease had existed constantly and extensively for more than forty years, and many persons had become so accustomed to it that they freely predicted its immediate reappearance even if it was stamped out.

An illustration of the absolute necessity of experiments upon animals to settle contested questions relating to disease may be drawn from the existing restrictions of the British Government on the American cattle trade. Although there has been no pleuro-pneumonia in this country for over four years, the British inspectors frequently condemn our cattle as being affected with that disease. The American inspectors and many European veterinarians hold that the disease actually discovered is ordinary pneumonia arising from exposure during the ocean voyage. How, then, can this difference of opinion between the British and American officers be settled? Not by clinical observation, not by discussion, not by diplomacy, for all of these have been tried. A scientific and incontestable demonstration could be made by exposing healthy cattle to those said to be affected with contagious pleuro-pneumonia. This would be a final and unanswerable test, but no such test can be secured. They have limited experimentation upon animals in Great Britain by law. Objections have been raised to such an experiment, and this question can not be brought to a final issue. If the bill under discussion should unfortunately become a law, an experiment could not be made at the seat of the United States Government to settle this important question, even should it become possible for other reasons to make the experiment here. The experiment would be calculated to give pain, it would not be an inoculation experiment, or a surgical procedure, and, consequently, it would be necessary, according to this bill, to keep the animals in the experiment, say twenty head of cattle, completely under the influence of ether or chloroform for the three or four weeks during which the animals might feel more or less pain. Such a requirement is absurd and impossible of fulfillment.

This is not an unusual or overdrawn case. It is only an illustration of contested or unsolved questions frequently coming before this department for solution, and which it is of the greatest importance to the agricultural industry to have settled reliably and permanently.

Another great work which the bureau has done by experimenting upon animals is the elucidation of the nature, the mode of dissemination, and the means of preventing the disease known as Texas fever of cattle. This disease was causing enormous losses to farmers by death of their stock, was demoralizing the cattle industry of a number of Western States and Territories, and was causing such fatality among cattle *en route* to foreign countries that the propriety of admitting our animals was questioned, and insurance during the summer months was advanced to ten per cent. of the value of the animals. Now all of this has been changed. Outbreaks of Texas fever in this country are rare and unimportant, and the insurance on export cattle has been reduced to one per cent. or less.

These are only a small part of the results accomplished by the Bureau of Animal Industry through this kind of experimentation. Such researches are difficult, and they are only successfully conducted where the conditions are favorable and where the investigators are stimulated by friendly encouragement and support. It may be safely said that under hostile legislation, classifying such experiments as a form of cruelty, surrounding them with numerous limitations and restrictions, subjecting the experimenter to the espionage of intolerant inspectors and threatening him with excessive penalties for infractions of any of the many requirements, the success which we now point to with pride would not have been achieved.

There are still many problems relating to animal diseases which must be investigated and solved by this class of experiments before the animal industry can yield to our farmers an adequate return. Agriculture demands and should receive all the assistance which can be given to it by the most advanced scientific methods employed under the most favorable conditions. We find to-day many of the dairy herds affected to the extent of seventy to ninety per cent. with tuberculosis; we find the swine fed upon the refuse milk of such dairies affected with the same disease, and we have every reason to believe that much of the tuberculosis in people comes from the same source. Is the Bureau of Animal Industry to be interrupted and hampered in its study of this and other diseases by legislation alleged to be for the prevention of cruelty to animals when the promoters of this legislation have failed to show that any improper experimentation has been conducted or is likely to be conducted in the District of Columbia?

Are the vital interests of agriculture in the whole United States to be made subservient to the demands of an over-zealous and intolerant local society, which appears incapable of taking a broad and liberal view of this subject? Are we prepared, in order to protect a few dogs, cats, and other animals from sufferings less than these animals usually undergo when they die a so-called natural death, to have legislation enacted which would withdraw the efforts of the scientists who are working for the relief of the hundreds of thousands of men, women, and children who now die annually in this country from preventable diseases? Are the millions of animals which suffer and die from animal plagues every year less worthy of attention than the few which die with less pain in the research laboratory? These questions appear not to have occurred to those who are advocating this legislation. The effort to limit, obstruct, and prohibit such experiments, although it originates from humane societies, is not in the cause of true humanity. It ignores the interests and sufferings of mankind and would perpetuate these sufferings to carry into effect what is clearly an erroneous view of what constitutes kindness and humanity to the lower animals.

If the legislation already enacted for the prevention of cruelty to animals in the District of Columbia is shown to be insufficient for this purpose, and additional legislation is thought desirable, this legislation should be so framed as not to affect the executive departments of the United States Government, and under no circumstances should local legislation be allowed to interfere with, demoralize, or prohibit the important scientific investigations which are specifically authorized by Congress for the benefit of the great agricultural industry of the whole country.

Agriculture at this time needs the encouragement and assistance which the experimental work of the Bureau of Animal Industry is bringing to it. Much has already been accomplished, but even greater results are promised in the near future. It is an age of science and progress, and all other industries are rapidly advancing through scientific research. Should not our farmers receive all possible aid from the same source?

A Contribution to the Pathology of the Thymus Gland.—According to *Médecine moderne*, says the *Province médicale* for December 12th, M. E. Siegel reported, in a recent issue of the *Berliner klinische Wochenschrift*, the case of a child that was suffering from asthma due to hypertrophy of the thymus gland, in which appropriate treatment led to recovery. There was evidently compression of the deep part of the trachea or of the bronchi either by a tumor of the mediastinum or by the hypertrophied thymus gland, which, the author says, has been seen to provoke fatal attacks of dyspnœa. This latter diagnosis seemed the more probable, and it was decided to employ surgical intervention by prolonging the incision of tracheotomy and removing the cause of compression.

On opening the thorax the thymus gland was found to be very much hypertrophied, and a part of it showed at the orifice of the wound and was projected outside at each inspiration and sank back again at each expiration. The thymus gland was then removed and at once respiration became normal without the aid of a cannula. The wound did well and the child was completely cured.

At the time of this observation the author made a study of the question which has been so often discussed in regard to the existence of thymic dyspnœa, which many authors, among them Friedleben, have identified with stridulous laryngitis. The two affections, however, he says, are completely different in their clinical evolution. A series of researches made in cases in which hypertrophy of the thymus gland had been the only cause of death demonstrated that the action of this hypertrophy was altogether unlike that of stridulous laryngitis, which, moreover, rarely if ever leads to a fatal termination.

It is difficult to say, the author thinks, how large the thymus gland has to be to be considered hypertrophied, for it may present notable differences in dimensions, even in a physiological state. The weight varies, according to different writers, from three hundred and twenty-five to seven hundred and fifty grains. Aside from the weight, other facts also may be taken into consideration. Bloody stasis, however, should not be considered a cause when the scarcity of blood-vessels in the organ is taken into consideration. The secretory influence of the organ is much more important, for, as Friedleben ascertained, the thymus gland seems to have an influence on general nutrition. The mechanism of the dyspnœa in thymic hypertrophy is not always easy to explain, for symptoms of compression are not always found, and adhesion of the two layers of the pleura also has been observed. Other authors have reported all the disturbances which are observed in compression of the blood-vessels at the base of the heart, and even of the latter, or else in lesions of the respiratory nerves.

The number of observations which have been published up to the present time is still too limited for it to be possible to pronounce in favor of one of these theories rather than for another, but in any case it is difficult to admit that compression may be the only cause, for Schule's experiments have shown that there must be at least a weight of a little over thirty-one ounces in order to render the passage of air through the respiratory passages impossible.

The author made a *résumé* of the cases which have been published up to the present time, in which hypertrophy of the thymus gland had been the cause of death, and he proposes to replace the name thymic asthma, under which the particular symptoms in question are designated, by the name of thymic stenosis of the trachea or of the bronchi.

The Employment of Oxygenated Water in Uterine Hæmostasis.—In the *Indépendance médicale* for December 29th there is an abstract of an article from the *Gazette gynécologique* in which the author, M. Petit, urges the hæmostatic properties of oxygenated water. He states that this water immediately provokes coagulation of the blood by simply accelerating the precipitation of the fibrin without destroying the corpuscular elements of the blood and of the tissues, which are simply modified, and that it is an excitant of the smooth fibre. This twofold property of oxygenated water is but an exaggeration of the normal properties of atmospheric oxygen, which is an excitant of the cells, and, on the other hand, according to Mathieu and Urbain, is the principal cause of coagulation of the blood in the open air by which carbonic acid is set free. At all events, several experimenters have remarked that the blood became more coagulable under the influence of oxygen. It is even admissible to think that the influence of oxygenated water on the blood should be equal to that of oxygen in a nascent state and in tension, since at its contact it instantly sets free its oxygen under the action of the hæmoglobin and of the elements of the fibrin.

While watching the action of oxygenated water on the blood the author saw the instantaneous formation of two layers, an upper one composed of a thick froth which imprisoned one or more very dense clots, and a lower one consisting of a dark-looking serum the color of which was due to the oxidized hæmoglobin or hæmatin. On account of these threefold properties which are possessed by oxygenated water the author thinks that it should be the preferable hæmostatic for external use.

He questions whether it is prudent to inject oxygenated water into the uterus with Braun's syringe. Grave accidents have been cited as following large injections of this liquid into fistulous tracts, due to emphysema of the cellular tissue, and into the pleura, from compression of the lungs. It is possible, the author thinks, that a considerable injection of this liquid into the uterus will cause painful distention of the organ, but several grammes may be injected slowly without any inconvenience. On the other hand, the rapidity of its decomposition being taken into consideration, oxygenated water seems to contribute much less than any other liquid to the dangers of intra-uterine injections, dangers which arise from their passage through the tubes, or into the veins of a uterus that is undergoing involution. In reality, the gaseous embolism probably does not go beyond the opening of the blood-vessels, and, should it be different, we should be fully reassured by the observations of Laborde and Quinquaud that the bubbles of oxygen would be rapidly absorbed by the blood.

Finally, M. Petit concludes that this hæmostatic property will commend itself all the more to experimenters in that this liquid, under the conditions stated, does not cause pain or alteration of the tissues, and does not leave clots which are likely to become infected; it is opposed to microbian cultures, and it can not be toxic because it becomes decomposed while acting, and it is not a cause of gaseous embolism, for in the very few cases in which this embolism is produced it will be immediately absorbed by the blood.

The Agglutinant Action of Chrysoidin on the Cholera Vibrio.—The *Presse médicale* for December 9th contains an abstract of an article by Dr. A. Blachstein (*Münchener medicinische Wochenschrift,* 1896, Nos. 44 and 45) in which the writer states that, according to the author, if a solution of chrysoidin is added to a liquid holding cholera vibrios in suspension there will be produced the phenomenon of agglutination which was observed by Gruber and Durham.

This phenomenon is better manifested if the procedure is carried out as follows: Into a test-tube measuring ten centimetres in length and one in diameter, and containing three cubic centimetres of sterilized water, a cholera culture of twenty-four hours on agar is introduced; with a platinum blade the culture is crushed against the side of the test-tube, which is briskly shaken so as to form a uniformly thick liquid resembling milk. To ten cubic centimetres of a 2.5 per cent. alcoholic solution of chrysoidin twenty cubic centimetres of distilled water are added, and of this mixture six drops are poured into the tube which contains the cholera vibrios. The following phenomena are produced: A few minutes after the chrysoidin is added, a fine powder is formed in the midst of this thick emulsion, which, on becoming condensed, leads to the formation of veritable flakes at the end of ten or fifteen minutes. At the end of thirty minutes all the vibrios will be found in a mass at the bottom of the tube. These phenomena will occur more quickly in a steam-heated room at a temperature of 98.3° F.

This agglutinant action of chrysoidin is not manifested except with the cholera vibrio, and it is absent when the drug is used on other vibrios analogous to the cholera vibrio. This action is not produced either with any other chemical substance, even though it is closely allied to chrysoidin, such as vesuvine and mono-sulphochrysoidic acid.

Dr. Blachstein thinks that the agglutinant action of chrysoidin may be due to a sort of chemical affinity between it and a substance which is found in the bodies of the cholera vibrios, which affinity is of the same nature as that which exists between the bases and the coloring acids. The process is then active and not passive like that, according to Gruber, of the agglutinant action of the cholera serum on the bacilli.

After injecting pigeons and mice with very virulent cholera solutions to which had been added a chrysoidin solution, the author ascertained that, while the animals experimented upon remained, without exception, alive, the check animals, which had received cholera cultures without the chrysoidin, died. In the experiments made with cultures of cholera vibrios, the addition of chrysoidin to the cultures did not modify the results; that is to say, the animals experimented upon died under the same conditions as the check animals. The chrysoidin evidently neutralizes the toxines of the cholera vibrio.

Death following the Administration of Nitrous Oxide.—In the *Therapeutic Gazette* for December Dr. H. A. Hare remarks that the following case illustrates the influence which nitrous-oxide gas may have when administered to persons suffering from atheromatous blood-vessels: A man between fifty and sixty years of age visited the office of a well-known dentist who makes a specialty of extracting teeth under the influence of nitrous-oxide gas, in order that he might have removed one or two molar teeth which were giving him trouble. He had often taken nitrous-oxide gas in the same dentist's office on previous occasions, and always without any ill effects whatever. On this occasion he took the ordinary quantity, his teeth were extracted, and he returned to consciousness with the usual rapidity. He left the dentist's chair, walked to a washstand, and began to rinse out his mouth with water. While doing this he stated that his right hand felt numb, then complained of the extension of this numbness up his arm, and rapidly to his leg and side. He was helped to a sofa, where in the course of a very few minutes he became partially unconscious. When Dr. Hare saw him the attack had already lasted about twenty minutes. The patient was breathing stertorously. He seemed to understand questions put to him, but was unable to answer them clearly, and in the course of a very few minutes passed into absolute insensibility, which, notwithstanding the use of venesection and other measures, deepened into coma, in which he died about twelve hours after taking the anæsthetic.

This case, says Dr. Hare, is reported not as one of death due to the direct influence of nitrous-oxide gas, but as an instance of the fact that the marked rise of arterial pressure which is produced by the administration of this drug during the period of anæsthesia may cause the rupture of a blood-vessel in persons who have a tendency to apoplexy.

Ovarine in the Treatment of Disturbances following Oophorectomy and the Menopause.—The *Gazette hebdomadaire de médecine et de chirurgie* for December 13th states that Dr. Mond (*Münchener medicinische Wochenschrift,* 1896, No. 36) reports twelve new cases in which ovarine was employed, and says that in every case the effect of the treatment was remarkable. There was progressive attenuation of the disturbances from the beginning of the third or fourth day, followed by their complete disappearance at the end of ten or twelve days.

The quantity employed was ten tablets a day, each containing eight grains of fresh ovarine substance. The author advises the employment of large doses in the beginning, which may be progressively diminished and increased again if the dose seems to be insufficient. Dr. Mond states that he has never seen the least symptom of poisoning in any case.

In several cases he substituted for the ovarine tablets others which had the same taste, the same color, and the same appearance, but contained only meat extract and salt. The administration of these tablets was regularly followed by the return of all the troubles. The real ovarine tablets evidently did not act by suggestion.

Lectures and Addresses.

THE MEDICAL PROFESSION AT THE CLOSE OF THE NINETEENTH CENTURY.

AN ADDRESS DELIVERED BEFORE
THE NEW YORK STATE MEDICAL ASSOCIATION
AT ITS THIRTEENTH ANNUAL MEETING,
October 14, 1896.

By CHARLES PHELPS, M. D.,
NEW YORK COUNTY,
NOW PRESIDENT OF THE ASSOCIATION.

(*Concluded from page 6.*)

Not long ago there appeared side by side in adjacent columns of a metropolitan journal, two articles upon the treatment of disease: the one, the advertisement of a plain, unpretentious, open quack; the other, a description of the cure of disease without medicine in a medical college of the highest respectability. It would have been impossible for the New Zealander standing upon the East River bridge to tell whether both were instances of arrant quackery, or whether both were merely *fin-de-siècle* methods of calling attention to medical progress. He would scarcely have suspected that any ethical difference existed between them.

The number of those who have availed themselves of the courtesy of the press, or of the services of its representatives, is necessarily limited; the lamentable fact in the matter is, not that it has profited a few, but that it is so largely tolerated by the sentiment of the profession.

There is in general a disposition to extol their shrewdness or good fortune, as it is variously regarded, rather than to reprobate or to deplore the position which they assume. It is a question whether he who censures is not more likely to have his pains attributed to envy or to a censorious disposition than to an honest discontent with conditions and tendencies which he knows to be vicious. Such is said to have been the reward always of those who have ventured to comment upon either the manners or the morals of their time. The present tolerance, if not the quasi or entire approval, of the application of commercial methods to the attainment of professional ends, is in sharp contrast with the rigid attitude held by the profession till within very recent years. It is still within the memory of those who are not of the eldest of the profession, that a surgeon in this city, of great skill and originality, a man of charming personality and brilliant attainments, was utterly wrecked by too much of this species of publicity, aggravated by a habit of consultation with practitioners of a school of medicine then deemed irregular. It is of interest to note that this school is now recognized, so far as concerns the emoluments of consultation, by several prominent medical organizations of the city and State of New York, and that this surgeon's journalistic exploits are now far eclipsed by those of more than one of his successors whose practices and professional repute remain unquestioned.

It would seem that the medical man may now have his portrait and biography published wide through the country press by the proprietor of a "Literary Bureau." While, to quote from a circular announcement, "the marvelous results met with in his practice, confidentially treated, can be got right down among the people" by the manager of another bureau, and at the same time his oracular utterances may be reproduced, and his eminent position and remarkable skill and acquirements may be certified by the interviewer, and in the end he may retain his professional respectability unimpaired, so long as he is not caught *in flagrante!* This is "hustling" as applied to a learned profession. It represents, not criminal, but essentially degrading, courses; it is subversive of honorable traditions, and destructive of the dignity and ideals of an elevated calling, as it would once have been fatal to the self-respect of the physician himself. The well-defined and recognized distinction which has long existed between the permissible arts of trade and the proprieties of professional conduct has been in a measure lost.

In trade or commerce, every honest artifice may be legitimately employed to add to the attractiveness of the vender's wares and to promote their sale, and his personality neither necessarily nor usually enters into the case. In a profession, where no tangible commodities exist, and personal attributes, as wisdom, skill, or experience, are the only assets which the possessor can proffer to the community, he can not vaunt his possessions without exploiting his own person, which is always in bad form. A braggart, which he then becomes, is not considered an agreeable person, and hardly commands respect. The attempt to saddle a profession with business methods is therefore an incongruous proceeding, and he who finds his advantage in it, either in notoriety or in pecuniary gain, deteriorates his own character and helps to demoralize the general sentiment of his profession. If a man conscious of his own great desert languishes in obscurity, his temptation to push his fortunes without too scrupulous regard to the means employed may be made irresistible by the spectacle of men no better than himself who have acquired both fame and fortune, and tolerance, too, in devious journalistic ways.

The unseemly struggle for precedence and the persistent strife for notoriety have not stopped with the utilization of the public press. The profession has, indeed, become so fully animated with the instinct of commercial rivalry that the intestine conflict waged to reach the surface has involved the use of every means within its grasp. If the battle is fairly fought and with honest weapons, we have, perhaps, no right to cry it shame, even though good taste and good manners be slaughtered when they chance to come between the eager doctor and his purpose; but when, as too often happens, resort be had to dishonorable artifice or false pretense, and the general conscience of the profession remains without affront, and even honor and consideration attend success, however illy earned, we may well inveigh against the lewdness of the time. The offenses which are committed against the honor and dignity of the profession in the struggle for place and profit are so varied, so closely connected with the personality of the offender, and often so near the line which separates propriety from impropriety, that it is difficult either to illustrate or to generalize them with justice or precision.

It is the natural right of every man, no less than his professional privilege, to assume, if possible, his just position in his calling; but it is neither right nor decorous that he should arrogate to himself a leadership for which he has no real qualification. If he asserts his presumptuous claim beyond the limit of his craft, he becomes to that extent a charlatan. It is common fame that in our profession we are mainly "colonels," if only by brevet—"professors," "experts," and "specialists"—and those of us who are still content to be of the rank and file are in number but a beggarly following. The "professor" who does not teach, or whose knowledge and aptitude for teaching are insufficient to fashion even rudimentary doctors; the "author" who simply compiles the results of his predecessors' labor; the "specialist" who, for his purpose and without warrant, carves out of the whole medical field some absurdly little plot in which he claims a profundity of knowledge, and the "expert" who has no more expertness than his neighbors, are doubtless shams. The standard of classification which is to determine how many of the pretenders to rank are really worthy to lead the march of a great profession, how many are merely pretentious fellows, and how many are charlatans, let him decide who can. It is quite sufficient to the purpose to know that only too many men, whatever their desert, openly or insidiously, by fair means or foul, manage to pose in the glare of a publicity which streams far beyond the boundary of their profession, and are sustained by a very general sentiment which demands only success and a cover of propriety not much wider than the costume worn in the islands of the southern seas.

The constant struggle for notoriety and the greed of gain have vulgarized the professional mind and blunted its sensibilities. Very little regard is shown for the weaker or less fortunate by those who are fairly in the saddle, and to them it matters little whether they who block the way are simply thrust aside or are trampled under foot. It has been too much forgotten that ours is a gentle, as well as a learned, profession, though it has followed naturally enough from the almost brutal contempt of moral and intellectual culture which we have seen to characterize the end of the century, and from the consequent subordination of life to what are considered its practical ends. At the outset, men may even cherish ideals, but the atmosphere in which we live is destructive of such unsubstantial fabrics, and conscience by ambition once corrupted, the Rake's Progress was not more surely downward than that upon which the doctor enters. He may for a time, after a resort to the "literary bureau" and the resources of the press, strive to delude himself that he is still without reproach, but, like Falstaff, he is apt to find it quite "as much as he can do to keep the terms of his honor precise." It is well if he does not come at last to accept the belief of the maid in Dryden's Epilogue, that honor is so easily lost, "no wit would be plagued with the keeping."

The ethical crimes which he commits are many and flagrant. The rape of cases by consultants and specialists, the assassination, the strangulation, of reputation by coteries who defame or ignore the work of aliens to their circle, the innumerable wrongs which live in honest men's remembrance, together make a story too hackneyed and much too long to tell, even though discretion might permit; no art could weave it so impersonally but full half of those who read would each conceive himself assaulted. The pity of it is, not that such things are, but that the too frequent eminence of the offenders makes their example peculiarly humiliating and pernicious, and that general opinion has grown callous. It is this public indifference to individual offense, this admiration and condonation of successful, even though criminal, audacity, which has had so many historical parallels and which now confronts us in our own profession, as well as in the larger society of which it forms a part.

The indefensible practices of physicians in their mutual relations have been extended to still more vicious infractions of the sacred obligation which they confessedly hold to their patients. There is only too much evidence that enormities, such as surgical operations not wholly in the interest of the patient, and alarming prognoses not justified by facts or by the real opinion of the physician, are far from unknown; but as they have not even the tacit countenance of the profession, they are happily indicative of nothing more than individual depravity. There are other offenses belonging to the same category, less heinous in character but equally culpable and of more frequent occurrence, which are much too leniently regarded by professional opinion. The practical lessons in physical diagnosis so often given to students in hospital wards at risk of the patients' lives, the utter indifference to the natural sensibilities of hospital inmates, which is the rule rather than the exception, the extortion of enormous fees from people of humble means for comparatively unimportant surgical operations, and the demand from the poorest of compensation so large that it involves to them the loss of the ordinary comforts of life, are crimes against humanity which seem neither to excite remark nor to elicit condemnation. Such disregard or repudiation of the higher obligations of humanity are evidence, if not of a low standard of professional morality, at least of a brutalization of professional sentiment. The persistent and determined pursuit of notoriety and money has bred selfishness, and the men whose professional duty naturally brings them in most sympathetic contact with their fellows, to whom they are bound in ties of fraternal honor or by the still stronger claims of suffering and dependence, have grown coarse and hard, and ready to cry with Sir Peter, "Damn your sentiments," but without his provocation. An eminent surgeon, not long dead, did not hesitate even to declare that he had never felt a personal interest in any patient beyond the collection of his fee, and some equally eminent physicians, if less frank in their speech, have indicated as much in their manner.

The success which is welcome, though founded upon the discomfiture or ruin of a rival; the sympathy for pain, which is never felt, and only feigned when policy demands; the oppression of the poor, whose faith has made them helpless prey, and all the varied sins without human penalty, are too often noted to pass for random facts in which the general profession has no concern.

In view of graver offenses against the honor of the profession, the failure to observe its mere proprieties would seem of little importance, were it not a lesson of experience that respect for the dignity of an office by him who holds it is essential to the exaction of that respect from others which alone permits its proper administration. The want of appreciation of the magnitude of the professional calling or of its formal traditions is not indicative of a distinctive tendency in medicine but rather a reflection in a different light, or from a different point of view, of the predominating spirit of the age which has made the practice of the medical art so largely a simple business pursuit, as it has of other arts and professions. The proposition having been practically accepted that trades and professions are but different means to a common commercial end, it has been easy to forget that there are still outward distinctions, which it is not only seemly but politic to recognize. This is not more true in medicine than in other of the higher professions. The medical man flits about with a little bag such as the barber carries, and is "Doc" to the "gents" who are of his friends or *clientèle*; the artist sells his canvas to the chromo-maker direct; the author vends his work from house to house "by subscription only"; and the clergyman goes forth in a pot-hat and a suit of pepper and salt, very likely mounted upon his bicycle, to combat Satan and all his works; yet they all, as professional men, have as part of their function the elevation and refinement of the community in which they live. These eccentricities, and such as these, are not occasional instances only, and they pass without comment. The profession which fails to impress a sense of the dignity of its ministrations upon those who serve it can hardly inspire reverence in those whom it serves. It is not strange that charlatans fairly divide with learned physicians the confidence of the people; or that shallow mountebanks who call themselves agnostics and can persuade the masses who crowd their "lectures" that blasphemy is eloquence, and coarse gibes and jokes which outrage public decency and profane the name of Deity itself are gleaming shafts of wit, should be able to put the clergy to their defense.

There are, happily, many medical gentlemen to whom such strictures as have been made apply in no particular; who avoid vulgar notoriety, and are not too solicitous for gain; who are conscientious in every professional relation; who recognize the dignity of their art, and the higher obligations which it entails, and who are as invulnerable as Dr. Johnson found Sir Joshua Reynolds. There are some among them, now advanced in life, so distinguished by courtesy of manner and delicate consideration for all with whom they come in contact, that they are said to be of the "old school." If the newer school were other than it is, they who are rather in it than of it, and they of the old school, might be less conspicuous for their virtue.

If the picture of the present manners, methods, and aims of the medical profession is not a flattering one, it will probably be recognized as true by those who have had opportunity and inclination for observation. We are not to be judged wholly apart from the influence of our time. The neglect of intellectual culture, the engrossment in perfecting the physical conditions of life, the cynicism and irreverence, and the contempt of the finer emotions, which characterize society *au fin de siècle*, must in some degree permeate its entire structure. If this consideration is to some extent an explanation, it is still inadequate. The unwarranted and unrestricted extension of commercial ideas and instrumentalities to professions like divinity and medicine, which profess a higher mission than personal aggrandizement, is one of the peculiar triumphs of modern democracy. It has grown out of the loss of reverence for ideals which is included in the general wreck of faith, sentiment, and traditions incident to the establishment of a fancied liberty and equality. It has reduced art, literature, the professions, and trade to a common level and equality of vocation, and left their followers, in whatever field, at liberty to push their fortunes by the same methods to the same end of personal advantage.

It has strangled noble aspirations at their birth, and made life as mercenary and prosaic as it is physically comfortable and complete. It may be useless to protest against popular delusions, but liberty as popularly conceived means license; and there is in truth no equality except in moral responsibility and in death; there is certainly none in mental, moral, or intellectual endowments, nor in social conditions; and political equality is both a delusion and a mask for despotism. It is these fair assumptions, so often mischievous in their consequences, that are in this instance, and in great measure, responsible for the misapprehension of professional obligations, and for the confusion of practice in which the allowable aims and methods of trade and commerce are made dishonorable or degrading in their misplaced application.

It is not difficult to suggest means for improving the *morale* of the profession. The first requisite to a betterment of its estate—a greater appreciation of its dignity and responsibilities, and a more conscientious regard for the personal obligations which it imposes—must be sought in a more liberal and better directed preliminary education, and in a broader culture. The admission to the study of medicine of immature and practically uneducated youth is an evil for which there is probably no remedy while medical schools continue to be private enterprises with no more than nominal state control. This irremediable condition is the less unfortunate since those so heavily handicapped at the start are unlikely to exercise any considerable influence in molding professional opinion or in establishing guides for professional conduct. The debasement of ethical standards is more directly chargeable to the larger class with some pretension to mental acquirement, and especially to those who fancy themselves liberally educated after an academic course such as is afforded by American colleges and universities. Their undergraduate time and mental energy, so far as they have exceeded the demands of collegiate and intercollegiate athletic sports, have been devoted in greater part to purely elective studies, in which their choice has been little trammeled by the influence or guidance of their instructors. They have usually inclined, through the influence of their surroundings, toward what are termed the practical branches of learning. At the end, they have acquired a certain knowledge of mathematics, football, and physical science, with a possible minimum of classical and philosophical training. This, which may be proper equipment for success in mercantile life or in engineering pursuits, or even for the laboratory study of bacteriology, is quite insufficient and unfit preparation for service in a profession which should demand not only mental discipline but a refinement of thought and feeling which comes only from wider and more intimate acquaintance with the humanities. It is only very exceptional men who are able to arrive at this by any acquisition of knowledge in later life, when early mental culture has been neglected. The basic requirement for any radical improvement in the tone of the profession is a change in the methods of academic education for those who are destined to be its leaders. The brief time allotted to the curriculum must be more largely devoted to the study of the ancient classics and of polite literature, to the philosophy of language and of history, and to moral and intellectual science, which together constitute the only means to the mental cultivation for want of which the learned professions have especially suffered in their ethical development. It is this mental crudeness which is largely responsible for the multitude of vagaries which afflict society in general, and for its absorption in the pursuit of material advantage, and its contempt of any infusion of natural sentiment; specifically, it has engendered an insensibility to the higher duties of the medical profession, an indifference to the requirements of its dignity and honor, and a lack of appreciation of the moral obligations of professional men to one another. It is not to be expected that any considerable number of those subjected to better and more advanced methods of intellectual training would attain to eminent scholarship, which is perhaps incompatible with the active work of professional life, as it is certainly unnecessary to the full understanding of its responsibilities; but it would result in a much higher average of mental culture, and this would make possible a fuller comprehension of the exact aims and obligations of the profession, and thus presumably lead to an amendment of its manners and morals, which are now just matter of complaint.

The same advantage which would be afforded by a change of academic methods is to be derived from a revision of the character and conditions of medical instruction, the faults of which are even more strongly accentuated, though their evil results may be more restricted. There is a more exclusive limitation of teaching to the simple conveyance of facts, and a neglect of effort directed toward mental discipline which is absolute. The teachers, with whom teaching is in fact only an incidental occupation, are usually immersed in the cares of private professional practice, and are only too often devoid of special aptitude or the necessary mental training to fit them for the task they have undertaken.

The schools are excessive in number, and established as business enterprises in sharp competition with their rivals, rather than as institutions of learning. The course of study is neither methodical nor systematically progressive. The students are permitted or encouraged to waste their time, engross their attention, and muddle their intellects with clinical demonstrations before they have acquired even the rudiments of medical or surgical knowledge. They are practically irresponsible and undisciplined outside the class room, and there is no attempt to give them a community of interests or of sentiments, or to surround them with a distinctive atmosphere, beyond that afforded by the routine of instruction such as existed in academic institutions before the introduction of that elective system of studies which has proved so destructive to the best influences of university life upon character. The most pretentious schools, and those conducted under the most favorable conditions of prestige and endowment, have made no important advances in system or administration.

If medical schools could be limited in number, and subjected to actual in place of nominal governmental control, their faculty of instruction selected for special qualification and paid a stated sum for exclusive service, and students given a thoroughly systematic training with proper attention to mental discipline as well as to their acquisition of fragmentary knowledge, some defects in preliminary education might be remedied and the tone of the profession might be vastly improved.

The possibility of elevating the present ethical standard of the medical profession exists essentially in the realization of these suggestions as to education, both preliminary and technical. "There are many events in the womb of time which will be delivered," and there are many which are much more improbable than an ultimate belief that after everything else in the world worth having has been attained, a higher mental culture may be desirable. The pendulum has so far swung in the direction of almost exclusive devotion to material interests that it must in the nature of things swing back toward intellectual culture, as after all the factor of greatest importance in the problem of human life.

There may well be included in the scheme for a broader and higher education the culture of that phase of character which is neither altogether moral, nor intellectual, nor yet simply instinctive. It perhaps might be better called the nucleus than a phase of character, since it is its essential part, and, though modified by moral, intellectual, or external circumstance, still retains its intrinsic quality, which makes the individuality of the man. It is the manifestations of inherent nobility and generosity and their conflict with inherent baseness and untoward circumstance which give to history and to fiction their charm, and make the heroism, romance, and poetry of common life.

The struggle goes on as well within as without the human breast, and too often no extraneous aids suffice to restrain the ascendancy of evil. The continued existence of a sordid spirit, and the addiction to questionable if not dishonest practices, is not incompatible with a high degree of moral and mental culture, just as an innate nobility of soul may irradiate the meanest conditions of life.

There are certain instincts and habits of thought and feeling which are accepted as the attributes of a gentleman without the necessity of definition or generalization. They are independent of rank or social surrounding, as they are of education or systems of morality, though greatly favored by the refining influence of either. Sir Philip Sidney or Colonel Newcomb was no more a moralist that Major Dobbin was a man of breeding and culture. The antithetical examples derived from history or fiction, or from narrower personal observation, of men of morals and of religious convictions or of parts and learning, who fail in their conduct to recognize the demands of personal honor, are quite too familiar to require suggestion. In the medical profession, in which of all vocations the rigorous observance of these requirements is most essential to the maintenance of necessary fraternal relations and to the exact discharge of professional duties, there is an astonishing number of shameless offenders, ranging from the famous Dr. Firmin of fiction to the professional neighbor or rival who is to each one of us the particular embodiment of this failure as it occurs in real life. Though possession of a nice sense of honor is rather a gift of Nature than an acquisition of artificial growth, and the sentiments which it inspires as well as the actions which it occasions are to a large extent instinctive, the ordinary coarser appreciation of the distinction between right and wrong in its purely æsthetic sense, which makes the average man fairly truthful and honest, and, in some small degree, even magnanimous or generous, is quite susceptible of cultivation both by precept and example. In this direction some hopeful effort may be made to elevate the tone of the profession regardless of the success or failure of the attempt to improve its preparatory training or to broaden its culture.

It may be impossible to inculcate by formal precept alone, in a professional school or elsewhere, the development of these intrinsic virtues. In the broader field of society the greatest and the purest and noblest teacher of our century, the burden of whose theme was simple faith and honesty of purpose, kindliness, and human sympathy, whose hatred of sham, vulgar pretense, and of all the petty meannesses of life made him cynic and satirist to the multitude, has to this end used example as the basis for the lessons which he taught. In the commoner walks of life the influence of personal example, so generally undervalued, may be within its narrower limits no less far-reaching and effective. In this later age of iron, with its hard practicality and its relentless struggle for precedence in wealth and position, there is no greater need than for some infusion of that chivalric spirit which half redeemed the coarseness and ignorance of the mediæval age, and for something of the fine sense of honor, the unswerving devotion to the unwritten law, *noblesse oblige*, which in later epochs and in spite of profligacy, cruelty, and oppression made life heroic. In the medical profession, he who can teach the lesson of a noble life, or with humble consciousness of all his weaknesses and imperfections strive to approximate its ideal as best he may, achieves the only great reward within his grasp. Fame and fortune are better sought in other fields; its honest gains are paltry recompense for unceasing toil, and great names in history are still carved with the sword, not with the surgeon's knife.

The single compensation it has to offer is sentimental, and even this is reserved for those who are still reverent of its traditions, who possess an exalted conception of its responsibilities, who are enamored of its labors, and who find in the consciousness of an honorable duty well performed the sufficient return for a lifelong devotion to the service of humanity. Twice happy he who at the end has secured besides some small portion of either the love or veneration of mankind.

The medical art, when inspired by sympathy and guided by a full sense of its serious responsibilities in the relief of suffering and in the preservation of human life, yields precedence in the sacredness of its mission only to the ministrations of the Church, and is worthy of the chivalric regard of the best of men; but practised as a simple business occupation, and degenerated to a vulgar scramble for the gain it brings, it is but a carrion trade, and they who practise it are no longer ministers of mercy, but prowlers in the shadow of the tomb, who find their profit in disease and death and fatten on decay.

Original Communications.

THE PHONENDOSCOPE.*

By MORRIS MANGES, A. M., M. D.,
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THE phonendoscope (φωνή, sound; ἔνδον, within; σκοπεῖν, to look) is an instrument which was devised by Bianchi,† in association with Bazzi, a distinguished Italian physicist, in the hope of obtaining a simple means of auscultation and percussion with which the vibrations from sounds produced naturally or artificially in the body would be neither diminished in volume nor altered in tone or rhythm.

The instrument consists of a cylindrical metallic capsule (A), the lower end of which is closed by a thin vulcanite disc which is rendered slightly convex by a metallic spring which is within the capsule. The upper end is of metal, and has two openings into which are inserted two hollow metallic plugs bearing soft-rubber tubes armed with ear-tips (D). The sides of the capsule are concave, so that the soft-rubber tubes may be wound around for convenience in carrying. On the lower end of the capsule may be attached a metallic rim, in which is inserted a thin vulcanite plate (B), in the centre of which is a small button of the same material. Into this button may be screwed a thin solid metal staff (C), two inches long and tipped with a small piece of vulcanite. When not in use this staff may be carried in two perforated knobs which are on the upper end of the capsule.

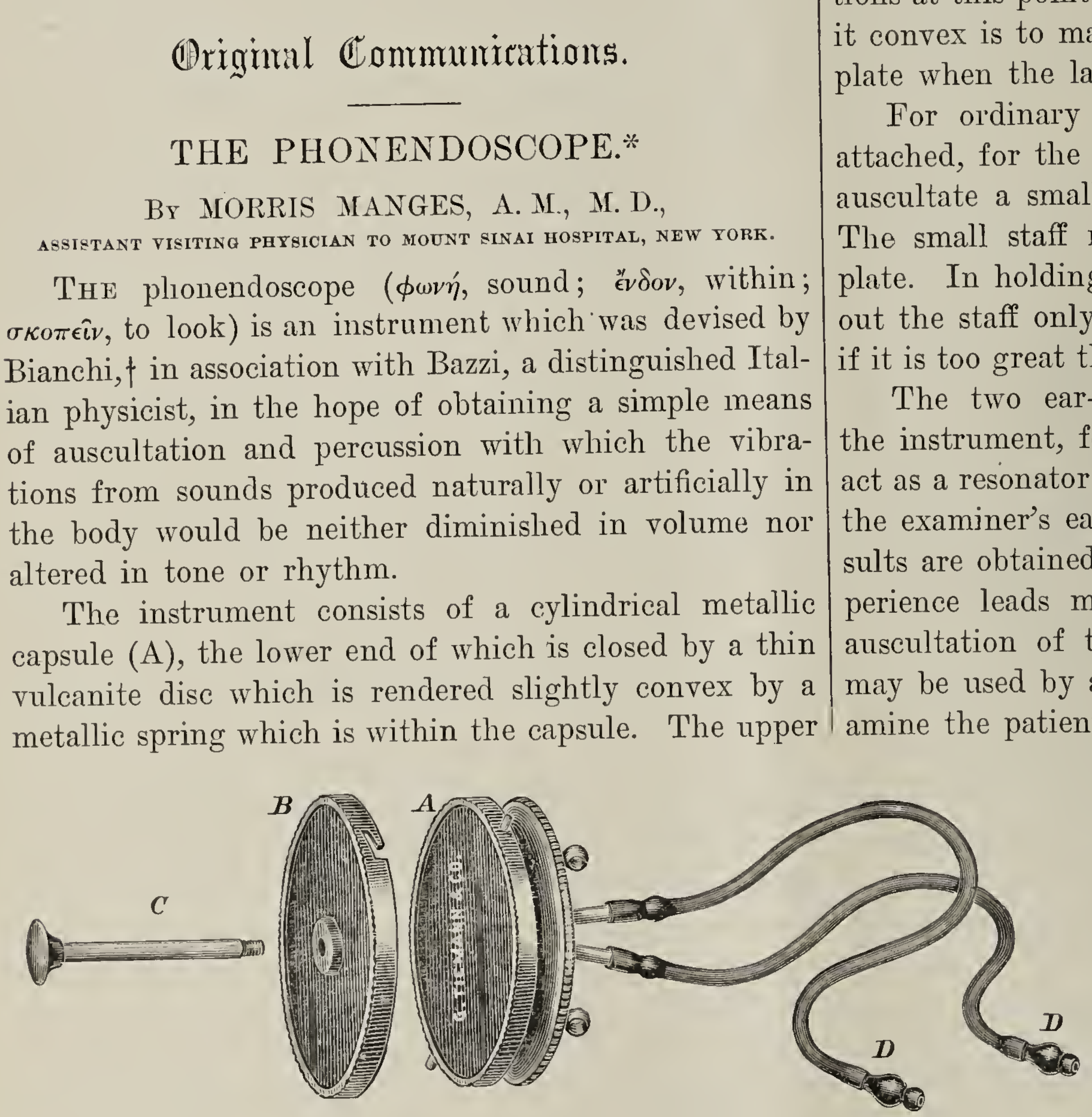

FIG. 1.

The instrument is very portable, and can easily be carried in one's pocket. The weight of the original instrument (manufactured by Martin Wallach's Nachfolger, Cassel, Germany) is two hundred and fifty grammes (eight ounces and a third); that made by Tiemann is somewhat heavier.

It will be readily seen that the hollow metallic capsule acts as a resonator. The vulcanite plate, being rendered slightly convex by the spring, receives the vibrations at this point especially. Another object of having it convex is to make it come in contact with the outer plate when the latter is attached to the instrument.

For ordinary auscultation the outer plate is not attached, for the latter is only used when we desire to auscultate a small area or for auscultatory percussion. The small staff must always be used with the outer plate. In holding the instrument either with or without the staff only moderate pressure must be used, for if it is too great the vibrations will be decidedly altered.

The two ear-tubes must always be inserted into the instrument, for otherwise the box would no longer act as a resonator; one or both tips may be inserted into the examiner's ears. Bianchi believes that the best results are obtained when only one is used. My own experience leads me to always employ both, except in auscultation of the heart. The unemployed ear-tube may be used by another person, and thus two may examine the patient at the same time. A larger number (six to eight) of ear-tubes may be employed, thus offering a very useful means for class instruction. A useful feature which is peculiar to the phonendoscope is the distinctness with which many auscultatory sounds may be heard by placing the instrument (without the outer plate and staff) directly over the patient's clothing.

Bianchi divides the uses of the instrument into two great groups—the determinations of the sounds heard normally or pathologically in the body (auscultation) and those produced artificially (auscultatory percussion). Among the former are the respiratory and cardiac sounds, the fœtal and uterine sounds, gastric and intestinal peristalsis, crepitation in joints and broken bones, etc. Such is the delicacy of the instrument that the vibrations in the vascular walls produced by the circulating blood and those due to the contraction of voluntary muscles may readily be perceived—a feat which could formerly be accomplished only with the microphone. In all of these examinations it is used without the outer plate and staff, unless the area to be examined is too small.

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* Read before the New York Academy of Medicine, Section in General Medicine, October 20, 1896.

† *Clinica moderna*, Florence, December 14, 1895. An extended work on the results obtained with his instrument will shortly be published by Bianchi.

For auscultatory percussion the latter are attached and the tip of the staff placed upon the body over the organ to be examined, preferably on some point which is near the surface and is uncovered by any other viscus. Vibrations are produced by gently stroking the skin in the neighborhood of the staff with the tip of the right index finger (Fig. 2). Short, light strokes are made, usually transversely to the direction in which we proceed; parallel strokes I have found less useful. Over solid viscera or consolidated areas the stroking must be more vigorous than over hollow or air-containing organs.

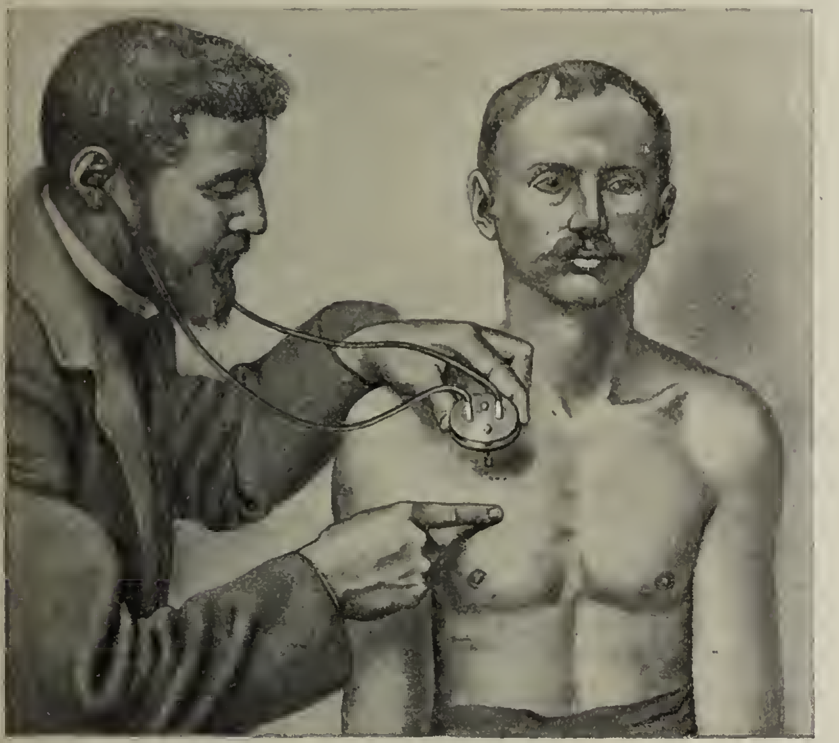

Fig. 2.—The method of using the phonendoscope in outlining organs.

Having ascertained the exact character of the tone produced by stroking in the immediate vicinity of the staff, we may proceed to stroke away from it until we observe that the pitch or quality of the note has changed, or, as preferred by Bianchi, we may begin at some little distance away from the staff and stroke centrifugally until we observe the same note as originally heard in the immediate vicinity of the staff. The point at which the characteristic change in note is heard is marked with a dermographic pencil. This, being repeated in the various directions from the tip of the staff, gives us a series of points which, being connected, outline the underlying organ. Either method is good, and may be varied to suit the organ under examination. However, not a little skill and practice are required to determine the exact place at which the note changes. This difficulty varies with different organs. Solid viscera or consolidated areas cause the least trouble; but, if we must pass over the ribs, as in stroking over the chest walls, or if air-containing viscera are in contact, as in the abdomen, uncertainty will frequently arise, which can only be lessened after one has had considerable experience with the instrument.

In determining the size and situation of the various organs, etc., by this form of auscultatory percussion, the tip of the staff must be placed at definite spots, which Bianchi has determined and mapped out. Instead of a detailed description of these points, I would refer to the diagrams of Bianchi.* It will be noted that several points are given for many viscera; the tip of the staff must be successively applied to each, and the boundary points obtained by the changes in the stroking note must be determined at each, for to get the best results we must not make the areas too large. The force of the stroking varies at different places; I have indicated this by modifying Bianchi's diagrams, a small dark circle being placed about the points when heavier stroking is to be used.

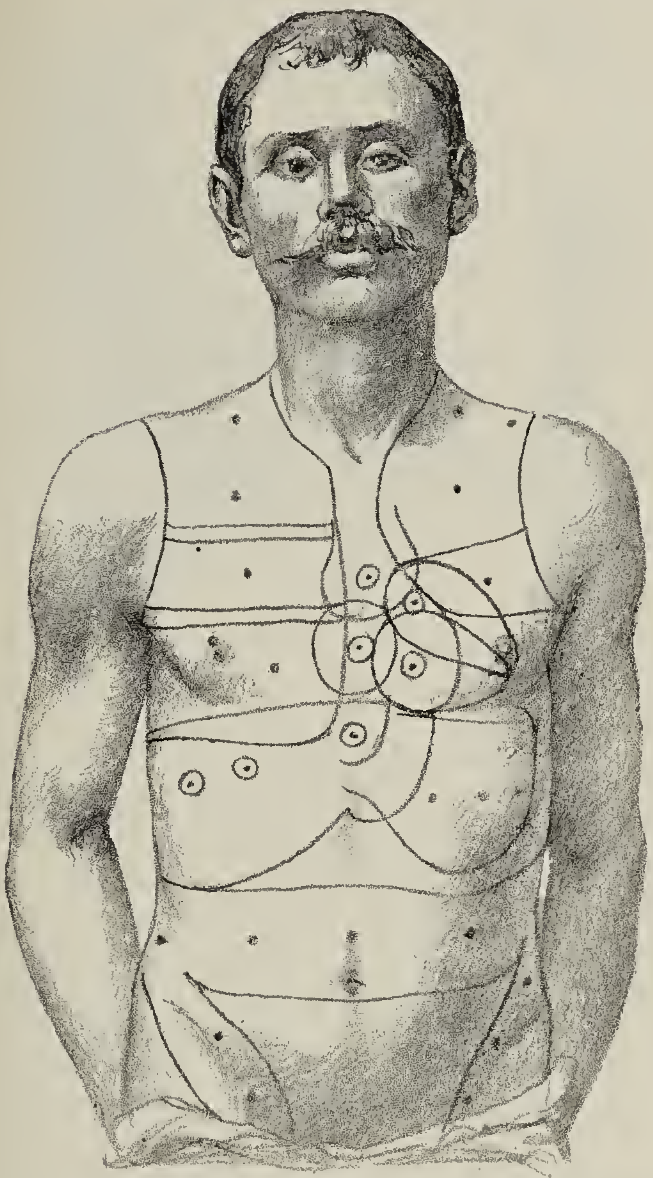

Fig. 3.—Phonendographic outlines of the lobes of the lungs, cavities of the heart, liver, stomach, and colon. The dots indicate the places where the staff of the phonendoscope is to be placed. Vigorous stroking is to be used where the dot is inclosed within a ring.

The method of examination is much simpler than it would seem from the detailed description, and the points are remembered more easily than it would appear at the first glance at the diagrams. It will be observed that but few points are over bones, the soft parts

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* The exact details are given by Schwalbe, *Deutsche med. Wochenschrift*, 1896, No. 31. See also the paper which has since been published by H. B. Baruch in the New York *Medical Record*, October 31, 1896.

(intercostal spaces, etc.) being preferred, because bone vibrates so readily that its vibrations will interfere with those of the organ under examination. It is also essential to try to avoid crossing from bony to soft parts wherever possible. It is better to establish a new spot from which to begin the stroking. Furthermore, along the costal border it is often wise to stroke along it rather than to proceed from the hard to the soft parts.

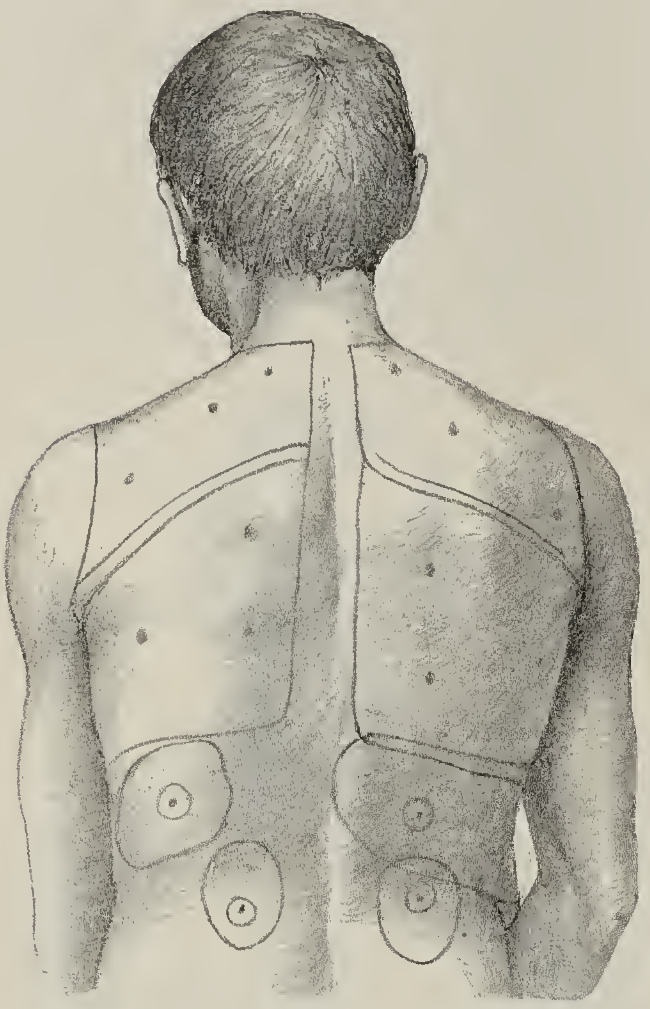
FIG. 4.—Phonendographic outlines of the lungs, liver, spleen, and kidneys.

Over tumors or deeply situated organs, like the kidneys and spleen, the staff is placed approximately over the centre of them, vigorous stroking being employed.

After a considerable practical experience with the phonendoscope, both in hospital and private practice, I am led to believe that the expectations raised by Bianchi are not entirely realized. This is especially true in auscultation of pulmonary and cardiac sounds, for it offers few advantages over the ordinary binaural stethoscope. In some instances I have found it very useful; thus, in determining pericardial murmurs and in fixing the upper level of the fluid in hydrothorax or hydropneumothorax.

In auscultatory percussion of the lungs I have been disappointed, for the successive stroking over ribs and intercostal spaces produces changes in the tone which are very confusing and which only very long practice with the instrument will clear up.

In mapping out the heart, however, the phonendoscope is exceedingly useful. The borders are determined with an ease and certainty which are offered by no other method.

A glance at Bianchi's diagrams will show that he is able to map out the lobes of the lungs and the auricles and ventricles of the heart. Neither of these have I been able to do; whether increased experience with the instrument will enable me to do so I am at present unable to determine.

In the examination of the abdominal viscera the phonendoscope is chiefly used to hear the sounds artificially produced—*i. e.*, auscultatory percussion. In ascertaining the size and situation of the stomach and colon, the instrument, so far as my experience will enable me to judge, has its greatest field of usefulness. Of its accuracy in outlining the stomach, I have repeatedly convinced myself by comparing its results with those obtained by other methods. Over the latter it has the great advantages of the simplicity and the relative rapidity with which these results are obtained. I shall therefore give the exact details: The tip of the staff is first placed in the seventh intercostal space in the left semiclavicular line, then on the linea alba adjacent to the left costal border; a third point is on the same horizontal line, one inch nearer the middle line; the latter point is not always required. If the stomach contains only air, the stroking should be gentle; if fluids are present, it must be stronger. The greater curvature, pylorus and cardiac ends are determined by successively marking the points at which the note changes. Even that part of the stomach which is covered by the liver may be determined, as will be seen in Fig. 3.

The colon may be determined by using the points given in Fig. 3. The strength of the stroking will depend on the nature of its contents, the rules being the same as those given for the stomach.

For the solid viscera, as the liver, spleen, and kidneys, its usefulness is more limited. For the liver, percussion is sufficiently accurate. It is only when it and palpation leave us in the lurch that the phonendoscope may be required. Enlargement of the gall bladder may readily be ascertained with it. The points are given in Figs. 3 and 4. Strong stroking. The spleen is easily determined. The kidneys are outlined in Fig. 4. I have been dissatisfied with the results obtained in seeking to locate these organs with the phonendoscope.

The bladder may easily be mapped out. Bianchi gives rules for determining the presence of fluid in the abdominal cavity.

Tumors may be outlined by placing the staff over the centre and stroking vigorously, the tip of the staff being moved successively in different directions if the mass is large.

The other uses of the instrument for the examination of aneurysms, the larynx, broken bones (crepitation can be obtained by almost imperceptible, and therefore painless, movements of the affected parts), fœtal heart sounds, etc., do not require any detailed descriptions.

In conclusion, I would say that, although my present experiences have not enabled me to corroborate all of the claims made by Bianchi, yet the phonendoscope is a very useful instrument, especially for outlining organs. It is true, as even Bianchi himself admits, that many of the above-mentioned data may also be obtained with the binaural stethoscope; nevertheless, a comparison between the two instruments will readily convince the unbiased observer that the phonendoscope is in some respects a distinct improvement on the binaural stethoscope.

941 Madison Avenue.

EYE STRAIN AS A CAUSE OF EPILEPSY, AND THE RESULTS OF EYE TREATMENT.

(A REPLY TO DR. FREDERICK PETERSON.)

By AMBROSE L. RANNEY, A. M., M. D.

(*Concluded from page 21.*)

Case XXIII.—This case was sent to me by Professor A. A. Smith, M. D., of New York.

He was a young minister of the gospel who had typical attacks of "genuine" epilepsy, and had been obliged to cease his work as a pastor. While in New York city to get professional opinions regarding his case, he was advised by one eminent neurologist to have his head trephined—although he had no scar, no depression of the skull, no typical symptoms of a localized irritation in the brain, no circumscribed pain at any spot, no paralysis, and in fact no indications as to just where to trephine or for what. This the neurologist who advised operation acknowledged.

At my request, Professor Robert F. Weir, M. D., examined him to determine if he found any indication for trephining, and decided most positively that no indications existed for so dangerous a procedure.

The patient disclosed a high degree of esophoria and was treated by me at irregular periods during 1894. Since then, he has been too far away from me and too busy in his profession to follow up the eye treatment as he should have done.

He has been greatly improved in his general health and is now busy in his calling. In the frequency of his epileptic seizures he has been markedly benefited (according to last report). He has not yet been cured of his epilepsy, nor is the maladjustment of his eyes yet perfectly corrected.

Case XXIV.—This patient was referred to me January 7, 1889, by Professor J. Williston Wright, M. D., of New York. His family history was a bad one, as epilepsy existed in both paternal and maternal ancestry. He had been circumcised as a baby for nervousness; had had epilepsy for eight years before I saw him; and for four years had had dangerous outbreaks of temper, in which he had thrown knives, forks, and other weapons at people, and was regarded as dangerous to his companions and others.

He was so excitable and uncontrollable that I operated at one sitting upon both interni under chloroform, because prior to operation he had homonymous diplopia and showed esophoria of 20° at the first tests. This practically completed all the work that I was able to do with this patient. He was soon placed in a private institution in England, and later he was removed to a private institution in America, where he now remains an incurable epileptic.

This case should in no respect be counted in this inquiry when figuring percentages of results, as the eye treatment was abandoned immediately after the first attempt to rectify his muscles.

Case XXV.—This case was referred to me April 7, 1892, by Dr. F. H. Olin, of Southbridge, Mass. The patient had had fits in infancy, and for four years before I saw her had had attacks of epilepsy in school. She had had many attacks of *petit mal* (often several during twenty-four hours) and several very severe *grand-mal* seizures at irregular intervals. Six months of bromide treatment accomplished nothing, and it was abandoned before I saw her. Her mental condition was unimpaired and she was perfectly well between the seizures.

She was withdrawn from my care before the eye treatment was completed, although I saw her at irregular intervals for a year and did some operative work on the muscles.

I have reported this case as unimproved, although I am not sure that decided amelioration or even cure is not possible in this case. I have written to Dr. Olin for a report, but have received no reply as yet regarding the condition of this patient.

Case XXVI.—This patient was referred to me by Professor A. A. Smith, M. D., of New York. Her case is reported in full in the *Archives of Ophthalmology and Otology*, April, 1896. She had been under the care of many physicians. She had been treated medicinally and dietetically for a long time with no benefit. She had also been subjected to subcutaneous injections of animal extracts for some months without benefit. She had also been seen by several surgeons, some of whom had recommended the removal of the coccyx. She was a bright, accomplished girl, who showed no signs of mental impairment from her epilepsy, and who was perfectly well between her seizures. Her attacks were commonly nocturnal—of the typical *grand-mal* variety—and accompanied by every diagnostic symptom. No reflex cause was found after examination in her pelvic organs, rectum, or teeth. She had no kidney disease. She had a slightly deflected and tender coccyx. She is unusually placid in her temperament and free from tendencies to nervous excitability. She is remarkably strong and well developed and is a very skillful athlete.

This patient presented a very complex eye problem that was extremely difficult to solve. Very complete details of the treatment of this case have already been published. Until within a few weeks past, she had been totally free from attacks for a period of sixteen months. During this summer, from causes that are somewhat obscure, she had got her digestive apparatus thoroughly upset and has had four epileptic seizures. Her eyes have been examined lately on her return to this city and a material change in them has been found. Her glasses are apparently properly focused and adjusted, but she shows some latent hyperphoria uncorrected; so that I am not at a loss to account for this return of her epilepsy, which I trust will prove temporary.

As she had been under my observation only two years and six months (more than half of which time she had been free from epileptic seizures and observed by me at very rare intervals), I do not consider that the eye problems are yet thoroughly solved. She is today wearing, and has worn for over a year, a one-degree prism for left hyperphoria; and it is possible that the latent hyperphoria which still remains to be corrected in this case is a very important item in her future treatment.

I have reported her case in the table as "decidedly ameliorated," but not as cured.

In closing this lengthy reply to Dr. Peterson, I think I have proved to the satisfaction of the reader that out of the twenty-six cases whose records I have published up to this date, four have abandoned treatment almost from its beginning and should not be counted. Of the twenty-two remaining cases, ten, or forty-five per cent., may be considered as well (seven being completely cured and three being practically cured); amelioration of the attacks has been afforded by eye treatment in nine cases, or nearly forty-one per cent., and no improvement has been observed in three cases, or about fourteen per cent.

Seven cases completely cured: Nos. 1, 4, 7, 10, 12, 13, and 20 of table.

Three cases practically cured: Nos. 5, 6, and 15 of table.

Nine cases of amelioration: Nos. 2, 9, 14, 18, 19, 21, 22, 23, and 26 of table.

Three cases not improved: Nos. 16, 17, and 25 of table.

Four cases not counted: Nos. 3, 8, 11, and 24 of table.

Total, 26 cases.

Some of the cases reported as ameliorated are still under my observation and may eventually be cured.

As this reply is to be final (so far as I am concerned), I think it wise for me to make here a general *résumé* of such points in this discussion as I wish to stand on record. Life is too short to attempt to convert those who will not see, or to wrangle over technicalities when more important matters stand idle.

GENERAL RÉSUMÉ.

A. I have endeavored to confine myself to the points at issue between Dr. Peterson and myself.

B. I think I have shown that reflex epilepsy exists in a far greater proportion of cases than Dr. Peterson thinks, when he says that the "proportion is certainly not above one or two in a thousand."

C. I think I have shown that Dr. Peterson is in error when he says that "authentic and trustworthy instances of the kind recorded in literature could easily be counted upon the fingers." My own published cases and others quoted would strain two ordinary pair of hands.

D. I think I have shown that Dr. Peterson is in error when he says that "the removal of reflex irritation will seldom alter the course of the disease." Eighty-seven per cent. of this set of published cases of reflex epilepsy have either been cured completely or markedly benefited by the relief of eye strain. Other men have had and published similar results.

E. I have brought forward here some very strong written testimony from physicians of repute and the patients themselves to prove that the histories published by me were those of "genuine" epilepties; that the results were as I stated, and that benefit followed the relief of eye strain after a failure of medicines or diet to control the seizures.

F. I think I have shown that I am not afraid (as Dr. Peterson has asserted) to rest my claims on clinical facts—suppressing nothing and endeavoring to throw all possible light upon the points at issue.

G. I think I have shown that the benefits which these patients have experienced are not due either to stopping the bromides or to simple counter-irritation (as Dr. Peterson has asserted). If this were so, why does not Dr. Peterson do the same and get the same results? He might get up counter-irritation on some of the large number of epileptics to whom he offers now but little encouragement.

H. I deny as absurd and untenable the remarkable statement of Dr. Peterson that the mental effect on a patient from a tenotomy is all that is produced. This is too weak a statement even for argument. The adversary must be in the last ditch when this is the only loophole of escape from clinical facts.

The effects of graduated tenotomies upon the relative power of the eye muscles, as well as upon the adjustment of the eyes, are too definite and positive (when done with skill) to justify any one in attempting to make the "mental effect" appear more prominent than the actual effect. The latter can be scientifically measured; the former is mere speculation.

I. I deny the implied statement of Dr. Peterson that a sort of permanent mental hypnotism is a possible factor in my results. I should be proud to possess any psychological power that could confer health and happiness upon sufferers that I meet; but I must modestly disclaim any such happy endowment, and give to Nature alone the credit of re-establishing herself after her burdens have been removed.

J. I hope that my readers may now acquit me of being a victim to "mental blindness" (as Dr. Peterson has asserted). I dislike to cast a doubt upon the accuracy of his diagnoses and conclusions so frequently; but for the sake of my family, patrons, and friends, I am extremely anxious to be again regarded as not absolutely wanting in reasoning power.

K. I think that Dr. Peterson's assertion that "the claims of Dr. Ranney regarding the efficiency of eye treatment are not and will not be substantiated" may be regarded by the reader as rather strong in the light of the facts published here. I have no doubt that my adversary means to be courteous at all times, but his methods of showing it are sometimes unfortunate and obscure.

A DETAILED SUMMARY OF THE TREATMENT OF TWENTY-SIX CASES OF CHRONIC EPILEPSY BY CORRECTION OF EYE STRAIN ALONE.

Case number.	Date of first examination.	Initials.	Age and condition.	Previous treatment and results.	Refractive errors.			Muscular anomalies.			Ocular treatment employed.	Drugs administered by me.	Number of attacks while taking bromides.	Number of attacks on stopping bromides.	Results of eye treatment to Jan. 1, 1894.	Remarks on case (Jan. 1, 1894).	Results of eye treatment (December, 1896).	Remarks on case (December, 1896).
					H.	M.	A.	Eso.	Exo.	Hyp.								
1	July 30, 1892.	Mr. B.	26 yrs., married.	Bromides for two months; negative results.	+0·50 +0·50	....	... .	8° Additional latent esophoria discovered.	..	..	Three graduated tenotomies upon the interni.	None.	From two to ten daily.	One hundred and six attacks during the first fourteen days.	No attack for more than twelve months.	Patient has been actively engaged as a skilled workman on machinery during the period covered by eye treatment.	COMPLETE CURE. No attack of any kind since last reported attack (about four years ago).	This case seemed very unpromising to me when eye treatment was commenced. He wears no glasses.
2	Sept. 2, 1892.	Mr. F.	27 yrs., single.	Bromides for fifteen years; negative results.	....	.... −0·50	+0·50 −0·50	6° Additional latent heterophoria discovered.	..	1°	Three graduated tenotomies for relief of esophoria and hyperphoria; glasses for constant wear.	None.	Four severe seizures in seven months prior to eye treatment.	Not determined.	Only one light attack since first visit (September, 1892).	This patient has used his eyes on an average of six hours per day at bookkeeping; he has entirely recovered from chronic dyspepsia of years' standing.	GREAT AMELIORATION. Eight attacks only in four years—some very light.	The attacks have been reduced about seventy-five per cent. This patient would probably have been completely cured of epilepsy if he could have followed an out-of-door occupation. His work as a bookkeeper entails too much strain upon his eye muscles. His dyspepsia has been cured.
3	May 5, 1893.	R. G.	10 yrs.	Bromides for a time; negative results.	1·75 1·75 More hypermetropia found later.	....	....	Double convergent strabismus.			Two graduated tenotomies upon the interni; hypermetropic glasses.	None.	Extremely frequent; often during each day.	Not determined.	As far as known, only one attack has occurred since the first visit.	This patient has made a remarkable recovery from partial idiocy.	Patient abandoned treatment after only about one week of my care. The fits have returned, and idiocy also.	This patient lost his glasses in a river. His family refused to replace them or to follow my directions. In spite of wonderful improvement, the treatment was abandoned.
4	Jan., 1886.	Mr. H.	43 yrs., married.	Bromides and other drugs for twenty-four years; negative results.	+2·50 +2·50	....	....	4° Additional latent esophoria discovered.	..	..	Two graduated tenotomies upon the interni; hypermetropic glasses.	None.	About four severe attacks during each year.	Not determined.	No attack for about seven years.	This patient has been using his eyes constantly for years without any asthenopia or headache.	COMPLETE CURE. No fits in nearly ten years.	This case had withstood all medicinal treatment for twenty-four years. His recovery was rapid and permanent after eye treatment.
5	Mar. 18, 1890.	Mr. H.	24 yrs., single.	Bromides in all possible combinations for three years; negative results.	....	....	+0·50 +4·00 −1·00	11° Additional latent esophoria discovered.	..	..	Two graduated tenotomies upon the interni; full correction of astigmatism by glasses.	None.	Two attacks during the year prior to eye treatment.	Several times as many as when the bromides were given.	Only one slight seizure during the past three years.	The effects of bromides upon the mental condition of this patient were alarming. He has entirely regained his mental and physical health, and has lately married.	PRACTICALLY CURED. Only three attacks in nearly six years—due to causes that might easily excite a convulsion in a healthy subject (see late record).	Every attack has been directly produced by an over-indulgence in wine or rich food. The slightest change in the axis of his cylindrical glass is apt to create serious nervous disturbance in this patient.
6	Nov. 27, 1888.	Mr. S.	19 yrs., single.	Bromides in enormous doses, with chloral, for many years.	+0·50 (scant) +0·50 (scant)	....	....	4° Latent esophoria and hyperphoria disclosed themselves to a high degree.	..	½°	Graduated tenotomies for esophoria and hyperphoria.	None.	Thirty-four days during the year prior to eye treatment had been attended with a series of convulsions.	This experiment was never deemed safe.	Two years and three months without an attack, and only one slight seizure in nearly three years.	This patient was afflicted with epileptic mania, and was at one time about to be committed as an incurable epileptic to an asylum. He required a room padded with mattresses while his seizures were active.	PRACTICALLY CURED. Only one series of attacks in past four years and six months—following a fainting attack caused by extreme pain and while living in a high altitude.	This case properly belongs, in my opinion, to the *class of complete cures*. The only attack that is reported during the long interval of four years and a half was produced by the pain of two enormous boils. He has had no attacks for fourteen months.
7	April 6, 1889.	Mr. S.	16 yrs., single.	Bromides at intervals, but in small doses.	+1·00 +1·00	....	....	5° Latent esophoria was disclosed to a very high degree.	..	..	Graduated tenotomies; glasses for reading.	None.	Seizures somewhat irregular; about four a year.	Not in excess of number under bromides.	No attacks for past two years and six months.	The family history of this case shows that eye defects were inherited by the patient. Serious nervous conditions had developed in the father and a brother.	COMPLETE CURE. No attacks reported in over five years, during which time he has been a student.	A brother of this patient has been an inmate for years of an institution for the education of the feeble-minded. The father has shown symptoms of insanity.
8	Oct. 28, 1892.	Mr. O.	28 yrs., single.	Bromides for three years.	.... 0·50	2·50	−0·50 +0·50	.. Crossed diplopia; hypo-exophoria.	16°	2°	Three graduated tenotomies; full correction of refraction by glasses.	None.	Three attacks during year while under bromides.	Not determined.	Not determined; patient returned to the bromides contrary to my advice.	This patient became alarmed because he had some seizures after stopping the bromides, and abandoned the eye treatment. The progress of the eye treatment had been more than satisfactory to me.	Patient never returned for further eye treatment, nor did he follow my instructions.	In figuring percentages of results, this case should not be counted.

Case number.	Date of first examination.	Initials.	Age and condition.	Previous treatment and results.	Refractive errors.	Muscular anomalies.	Ocular treatment employed.	Drugs administered by me.	Number of attacks while taking bromides.	Number of attacks on stopping bromides.	Results of eye treatment to Jan. 1, 1894.	Remarks on case (Jan. 1, 1894).	Results of eye treatment (December, 1896).	Remarks on case (December, 1896).
9	May 28, 1888.	Miss S.	13 yrs.	Bromides for three years; negative results.	H. M. A. +1·50 .... +0·75 +1·75 .... +0·75	Eso. Exo. Hyp. 10° .. .. A high degree of latent esophoria disclosed itself later.	Three graduated tenotomies; glasses for constant wear.	None.	About two severe seizures each month.	Continuous epilepsy that endangered life, within twenty-four hours.	Epileptic seizures somewhat less than when under the influence of bromides; the physical condition of the patient is greatly improved.	This is one of the cases where the marked improvement in the patient is not as clearly shown by the numerical decrease in the epileptic seizures as by the changes in the patient herself. She is physically a different being than when taking bromides.	Amelioration of attacks. No late report has been obtained either from the physician or the family. I have not seen the patient for three years, and do not now know her address.	The treatment of this case was begun and finished before the instruments of precision of the present day were sufficiently perfected to enable the oculists to do creditable work upon the complex ocular problems of epileptics.
10	Oct. 22, 1890.	Mr. F.	40 yrs.	Had never taken any bromide salts.	+1·50 .... +1·50	6° .. .. Homonymous diplopia prior to tenotomies.	Four graduated tenotomies; spherical glasses for constant wear.	None.	Had never taken bromides.	Only one severe fit; uncontrollable attacks of nausea accompanied by symptoms of *petit mal.*	No convulsive seizure for over two years; only one attack of nausea during year 1893.	The paroxysms of nausea that formerly lasted a week, and were closely allied to attacks of *petit mal*, have been greatly modified, and are now very infrequent.	Complete cure. No epileptic seizure for almost five years. One attack of nausea in 1895 without loss of consciousness.	The recovery of this patient seems to be complete in spite of the failure of drugs to control either the epilepsy or the attacks of nausea. He has to use his eyes almost constantly in his vocation.
11	Mar. 27, 1891.	Mr. B.	22 yrs.	Had taken bromides for years, but had abandoned them for six months prior to eye treatment.	+0·75 .... +0·75	5° .. .. Latent esophoria existed.	Two graduated tenotomies upon the interni; glasses for his refractive error.	None.	Frequent severe seizures.	One hundred severe attacks during past six months; twenty-five attacks of *petit mal* often during twenty-four hours.	Epileptic seizures were markedly reduced in number prior to the sudden death of the patient.	This patient discarded his glasses contrary to instructions. He was found dead with a wound on the forehead, supposed to be due to falling upon a stone when seized with an epileptic attack.	Found dead *with his glasses in his pocket.*	This patient entirely disregarded my instructions as to the use of hypermetropic glasses. This may have caused the convulsion that led to his untimely end.
12	Mar. 1, 1893.	Mrs. G.	30 yrs., married.	Bromides for three or four years; no benefit derived. Serious mental and physical effects were apparent.	+1·00 .... +0·50 +1·50 .... +0·50	2° .. .. Latent esophoria disclosed itself to a marked degree.	Two graduated tenotomies upon the interni; correction of the refractive errors by glasses.	None.	Paroxysms of continuous epilepsy at intervals that would last from twenty-four to forty-eight hours.	Patient did not dare to abandon bromides until after the second tenotomy.	No attack during the past five months.	Frequent and uncontrollable hysterical attacks that occurred prior to the eye treatment are things of the past. The patient gained twenty-eight pounds in weight within three months after the withdrawal of the bromides. Her mental powers have been perfectly restored.	Complete cure. No epileptic seizures during the past three years and six months.	This case appeared to me to be almost a hopeless one when first seen. Her physical and mental condition was alarming. The letter of Dr. Hedges and the report of her husband both confirm this statement.
13	April 8, 1893.	Mrs. W.	30 yrs., married.	Bromides seemed to exert no influence upon the attacks.	Absolute emmetropia (even under atropine).	7° .. .. The esophoria was totally latent.	One graduated tenotomy upon the right internal rectus.	None.	Exact record not kept by family. Several occurred during the first week that I personally controlled the case.	Not materially altered.	No attack for past nine months.	This patient was found to be absolutely free from refractive errors. Her esophoria was also totally latent. The solution of this problem was effected by a judicious use of prismatic glasses.	Complete cure. No attack of any kind for three years and six months.	This case seemed a desperate one at the beginning of my work. She had no error of focus, and but one graduated tenotomy was required to complete the eye treatment and to restore perfect health.
14	Mar. 2, 1893.	Mr. S.	19 yrs., single.	Bromides for seven years; negative results.	Absolute emmetropia (even under atropine).	7° .. .. The esophoria was almost totally latent.	One graduated tenotomy of right internal rectus.	None.	An attack about every fourteen days.	Withdrawal of bromides for four months did not affect frequency of epileptic attacks.	Patient has passed six months without an attack since the operation; only two attacks in thirteen months.	A terrible accident occurred to this patient. While in a fit he overturned a lamp, and was burned so that his life was despaired of. Since then the eye treatment has been suspended until lately.	Decided amelioration. This patient continues to have attacks occasionally, but has never returned to bromides.	Eighteen attacks have occurred in three years and six months, some slight. This is about one quarter of the number that his average (while under bromides) would have aggregated in the same time.
15	Sept., 1893.	Mr. P.	26 yrs., single.	Bromides for some years; negative results.	Emmetropia.	7° .. .. Additional latent esophoria.	Three graduated tenotomies upon interni.	None	Six severe convulsions during the year that preceded the eye treatment.	Not determined.	No attack for a period of eleven months during 1893.	This patient has been entirely relieved of chronic constipation of many years' standing (as a result of his improved nervous tone).	Practical cure. Two or three light seizures have followed severe gastric upsets during the past three years.	This patient indulges in very violent forms of athletics constantly as a pastime. He is irregular in sleeping and imprudent in eating. He is a bookkeeper, and uses his eyes constantly.
16	Mar. 23, 1893.	Mr. H.	18 yrs., single.	Bromides for some years; negative results.	2·50 .... 1·00	Double divergent strabismus; apparently a right hyperphoria also.	Two graduated tenotomies upon the externi; full correction of refractive error by glasses.	None.	A severe convulsion each month; from two to fifteen attacks of *petit mal* daily.	Not determined.	Four months without a convulsion; attacks of *petit mal* much less frequent.	The eye conditions of this patient are as yet only partially solved. This case is one of the most difficult cases of heterophoria that I have ever seen.	Not improved. The fits and mental impairment of this patient were not markedly improved when last report was received.	This patient was too sluggish mentally to give intelligent eye tests. I regard this case as one of organic brain disease. I have not seen the patient in nearly two years.

17	Dec. 28, 1891.	Miss F.	17 yrs., single.	Has never taken the bromide salts.	Absolute emmetropia (under atropine).	3° .. .. Some latent esophoria was disclosed.	One graduated tenotomy upon the right internal rectus.	None.	Had never taken bromides.	About four severe convulsions during each year.	Results negative; patient continues to have attacks every four or five months.	The improvement in the heterophoria was marked in this patient, but no material change in the frequency of the attacks followed.	Not improved. This patient abandoned treatment about two years ago.	The probability of a reflex pelvic cause in this case seemed great. No examination was made while under my care.
18	Oct. 13, 1890.	Miss J.	22 yrs., single.	Bromides for years; attacks not arrested, but decreased in number.	1·00 .... 1·00	.. 18° 5°+ Crossed and vertical diplopia.	Graduated tenotomies upon both externi and superior rectus; full correction of refraction by glasses.	None.	About four severe attacks each year.	About one severe attack each month.	Only three attacks in eighteen months.	This patient has been enabled to dispense with a constant attendant. She goes to places of amusement, balls, etc., and is regarded as an invalid no longer by her parents or friends.	Decided amelioration. This patient still has occasional seizures, but she requires no attendant, and is able to work. She has never completed the eye treatment.	The parents of this girl decided to abandon eye treatment before I deemed it wise. When I last saw the patient she looked like a different being than when she first came under my care.
19	Mar. 1, 1893.	Miss D.	12 yrs.	Bromides for eighteen months; physical results unsatisfactory.	2·75 .... 3·25	2° .. .. A high degree of latent esophoria disclosed itself.	Graduated tenotomies upon the interni; glasses for constant wear.	None.	Attacks arrested for eighteen months at one time.	Four severe convulsions in twelve weeks prior to eye treatment.	Five attacks during past eight months; seizures much less severe than formerly.	This patient has not yet been observed for a sufficient time to speak definitely about results. Her parents and physician regard her as very much improved by eye treatment.	Some amelioration. The patient has not had the eye treatment completed.	The slow approach of the menses has been an important factor, I think, in causing the attacks during the past two years. The eye treatment has been unfortunately postponed for two years or more.
20	June 15, 1893.	Miss D.	30 yrs., single.	Bromides for over five years.	1·50 .... 1·50	9° .. .. A high degree of latent esophoria.	Two graduated tenotomies upon internal recti; +1·00 s. glass for constant wear.	None.	Ten severe seizures in five years.	Two severe fits one month apart.	No epileptic seizure for over seven months.	This patient has steadily filled a clerical position that involved a constant use of the eyes during the period of treatment in my office.	Complete cure. No attack of any kind during past three years and six months.	This young lady has had to use her eyes constantly as a bookkeeper, yet she has been perfectly restored to health by eye treatment.
21	Feb. 17, 1892.	Mr. T.	22 yrs., married.	Bromides in heavy doses for past ten years.	0·50 .... +0·50 0·50 .... +0·50	7° .. .. This patient had shown an approach to double convergent squint prior to my tests.	Both interni had been operated upon prior to my examination of the patient. One graduated tenotomy was performed by me.	None.	An average of six severe fits each year, with some *petit-mal* attacks.	Not determined.	During the past year the patient has had six seizures.	The eye treatment seems to have accomplished as much as large doses of bromides did thus far; apparently the epileptic attacks are growing still less frequent. The physical condition of the patient is very much improved.	Some amelioration. This patient is very apt to have attacks from gastric upsets. He had an injury to his head years ago that may be a factor in his epilepsy.	This patient had had two operations done upon his interni (before I saw him) by an oculist in Maine. I waa therefore embarrassed in my work from the onset from a lack of knowledge of the original conditions.
22	Oct. 24, 1893.	Miss R.	22 yrs., single.	No bromides.	1·25 .... 1·25	15° .. 9° Extreme nystagmus when either eye is covered.	Graduated tenotomy upon left superior rectus.	None.	Had never taken bromides.	Almost daily attacks of *petit mal.*	Attacks less than before operation.	The treatment of this case has not progressed far enough to justify any marked improvement in the epileptic seizures. Extreme heterophoria still remains.	Decided amelioration. The actual number of seizures is less than before the eye treatment, and the nystagmus is totally arrested unless the right eye be covered or closed.	This case was one of *terrific nystagmus.* She had been operated upon in infancy for double cross-eye; hence the eye tests have been very unreliable, and the results even better than I at first hoped for.
23	Oct. 21, 1893.	Mr. M.	31 yrs., single.	Bromides for past twelve years.	0·50 (scant) .... 0·50 (scant)	7½° .. .. Unconquerable diplopia.	Three graduated tenotomies upon the interni.	None.	Four severe fits during past year.	Has never dared to abandon the bromides.	No attack since the first graduated tenotomy (nearly four months).	In spite of the sudden withdrawal of the bromides, the patient reports a very decided improvement in his general physical condition.	Decided amelioration. Occasional seizures still occur, but the patient's physical and mental condition is greatly improved.	This patient has been enabled to return to active work as a minister of the Gospel.
24	Jan. 7, 1889.	Master R.	9 yrs.	Bromides in large doses at intervals for some years; negative results.	0·50 .... 0·50	6° .. .. Additional latent esophoria.	Two graduated tenotomies upon the interni, under chloroform.	None.	A series of convulsive seizures at irregular intervals. Very frequent attacks of *petit mal* between the convulsive outbreaks.	Not tried.	Negative.	The patient was withdrawn from my care before the results of eye treatment could be determined. Marked latent heterophoria remained uncorrected.	This patient has been confined in a private retreat for the past four or five years.	The marked mental derangement of this boy (at times) and his violent temper made it impossible to carry out a system of eye treatment with any hope of success.
25	April 7, 1892.	Miss C.	15 yrs.	Bromides for six months; results not satisfactory.	0·50 .... 0·50	6° .. 4° Considerable latent esophoria and hyperphoria existed.	Graduated tenotomies upon both internal recti and left inferior rectus.	None.	Very severe seizures at irregular intervals. *Petit-mal* attacks very frequent, often several during each day.	... .	This patient has about as many attacks as when under the influence of bromides.	The correction of the existing heterophoria in this case is probably imperfect. Further operative work will doubtless have to be done before orthophoria is established.	Not improved. This patient was withdrawn from my care by her parents in spite of the protests of the family physician.	This was a complicated and difficult eye problem to solve, and the parents were not content to wait for results. I still feel sure that good results would have been manifested later had the eye treatment been completed.
26	Mar. 15, 1894.	Miss D.	25 yrs.	Bromides; animal extracts; negative results.	+1·50 .... +1·50	8° .. 1°	Graduated tenotomies upon both interni.	None.	Very severe attacks of *grand mal* about once in each week.	Same as when under bromides.	....	....	Decided amelioration. This patient *passed sixteen months without attacks of any kind.*	I have strong hopes of yet making the results of this case a permanent and complete cure.

Completely cured, Cases 1, 4, 7, 10, 12, 13, 20. Amelioration, Cases 2, 9, 14, 18, 19, 21, 22, 26. Practically cured, Cases 5, 6, 15. Not improved, Cases 16, 17, 25. Not counted, Cases 3, 8, 11, 24.

L. I think the total percentage of epileptics who suffer from eye strain as an important factor is very large, after first deducting from the total number the comparatively small number of cases that owe their epileptic seizures directly to some organic lesion of the brain or to a depression of the skull. Almost all chronic epileptics give a history of falls that have some time injured the head in some way. Few of them, however, have enough depression of the skull to make trephining imperative, and in every such case the injury must have preceded any epileptic seizures to make it probable that the fits were the direct result of the injury.

M. The enormous percentage of complete and practical recoveries (in this set of twenty-two cases reported here, where eye strain was relieved) is much larger, I think, than any one can reasonably hope to obtain in any larger number of cases, even when the oculist is particularly skillful in solving the complicated eye problems of epileptics, and has had a wide experience in this field. Such a percentage as reported here is vastly greater than I have ever proclaimed or even hoped for in epileptics.*

N. I think I have shown that eye strain can exist without any eye symptoms, and that "pain in the occiput and nape of the neck" need not necessarily exist, although common in such cases.

O. I think I have explained quite fully why epileptic patients may have temporary relapses after good results from eye treatment, without in any way justifying invidious criticism upon the treatment or the permanent benefits that might have been uninterrupted if the patient had avoided new sources of reflex irritation.

P. I would impress the reader with the fact that any marked amelioration of epileptic seizures (in violence or frequency) without drugs is a great step in advance of previous methods of medication (even if the cure is not complete).

Q. I would again impress upon the medical profession the extreme difficulties of eye treatment of chronic epileptics, and the necessity of long-continued and patient watching for "latent" errors of adjustment, before operative work is discussed or attempted.

Moreover, it is important that the oculist be familiar with the new methods, and that the patient be sufficiently intelligent to realize the importance of details and to be persistent in the treatment until perfect adjustment of the eyes is established.

I lately received the following letter from a country practitioner that tells its own story:

> "DEAR DR. RANNEY: I have read your articles on the eye treatment of epilepsy with great interest. I know little about eyes, but I have an epileptic patient that can not be cured. I am tempted to cut an eye muscle and see if it does any good."

R. I think it can be shown that many eminent medical men, who bitterly opposed in years past the views advocated here, have been forced at last to give some recognition to the eye treatment of nervous diseases. They are not yet enthusiasts perhaps, nor are they all skillful in the work; but they can not afford to longer oppose, with manifest bigotry or intolerance, the clinical facts that have been brought to their notice.

It is needless to bring others than Dr. Peterson into this controversy; but quotations can easily be made from many of the latest text-books on the eye and on nervous diseases to show how much attention has been given to eye muscles (in contrast with text-books of the past).

S. I would again raise my voice in protest against treating any form of nervous disease with drugs (especially the more intractable types, such as epilepsy, insanity, chorea, and neuralgias) until a very careful and intelligent search has been made for all reflex causes.

It may take time to do this, and it may involve some expense; but it is often the shortest and surest way to effect a cure. It is a scientific rather than an empirical and purely speculative method of stopping symptoms instead of the cause.

In the accompanying table I present the original summary of the twenty-six cases of epilepsy reported by me. They were treated by me entirely through the correction of errors of refraction and anomalies of adjustment of the eyes.

I have reproduced the original records of January, 1894, in order that the reader may contrast the four right-hand columns with each other and thus see the progress of each patient during the last three years.

The other columns give the reader much valuable information respecting the history of the case, the refractive errors that existed, and the treatment of the eye muscles.

When I close this somewhat lengthy reply to Dr. Peterson, I shall have finished this controversy that arose because I wished to see justice done to a new and rapidly growing method. I do not hope in this world to see the lion and the lamb lie down in peace together; but I have not yet lost faith that, in time, careful, honest, conscientious, and painstaking work will bring the reward of appreciation and respect even of those who differ with me.

A Cachet for Migraine.—The *Presse médicale* gives this formula:

℞ Antipyrine	7½ grains;
Phenacetine	1½ grain;
Acetanilide	¾ of a grain.

M. For one cachet. The caution is added that it will be prudent not to take more than three cachets in twenty-four hours at first.

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* Epilepsy is regarded by most authors of repute as almost an incurable disease. If any one *could positively cure all cases*, the entire hotel accommodations of New York would not be sufficient to hold the epileptics that would apply for relief.

CONTRIBUTIONS TO THE HISTORY OF MEDICINE.
MEDICINE OF THE RENAISSANCE.
SANCTORIUS AND HIS FOLLOWERS.

By FRANKLIN STAPLES, M. D.,
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The period of the middle ages is made to extend from the fall of Rome, A. D. 476, to the capture of Constantinople by the Turks in 1453, which event also marks the end of the Byzantine empire and the beginning of the Ottoman rule over the Grecian empire, which continued thereafter for about four hundred years. Universal empires were at an end, and the migrations, invasions, crusades, the rise of the feudal system, and wars which characterized the decline of letters and arts in the dark and middle ages, proved to be the means which finally resulted in the formation of the present modern nations.

During the times of mediæval decline and darkness the medicine of ancient Greece and Rome was preserved mainly in the Arabian schools. The Arabian empire in the eighth century comprised the whole basin of the Mediterranean excepting its northern side. It had its possessions in Europe, Asia, and Africa, and in many of the islands of the Mediterranean. Spain for more than five centuries was held by the Arabs, and Arabian medicine has an important place in history from the eighth to the thirteenth century. Schools of medicine were at Bagdad, Bassorah, Ispahan, Damascus, and other places. The schools at Alexandria remained, although the Alexandrian library had been more than once destroyed. The Alexandrian school had been in a great degree the model for the Arabian schools.

The famous school of Salerno, at the old town of that name in the south of Italy, had a large place in the history of mediæval medicine. Beginning probably some time in the ninth century, it has been called the connecting link between ancient and modern medicine. Here the doctrines of Hippocrates and Galen were taught, and their works, which had been rendered in the Arabic, were here translated into the Latin; this by the order of Charlemagne. Salernum became known as a *civitas Hippocratica*.* This school continued, in name at least, until put to an end by decree of the French government early in the present century.† The schools of Spain, in the times of Arabian settlement, were those of Cordova, Seville, Toledo, Saragossa, and Murcia. Among the physicians and authors, a part of whose works have come to us, were Rhazes, who practised and taught at Bagdad, and first accurately described the small-pox; Avicenna, of Bokhara, whose work, the *Canon*, was acknowledged authority in the schools of Europe for nearly six centuries; Albucasis, who, at Cordova, wrote his medicosurgical text-book, the *Al tasrif* (compendium), taught lithotomy and the ligation of arteries in their continuity, and made improvements in many other surgical procedures; Avenzoar, of Seville, who has the credit of first describing inflammation of the pericardium and its results in effusion and empyema. Averroës, of Cordova, a pupil of Avenzoar, a philosopher more than a physician, has been called the Mohammedan "Spinoza."

The philosophy of the times has been styled "a strange jumble of astrology, alchemy, cabalism, theology, and the teaching of the so-called Hermetic books; and the light of the true science then existing was damaged by the occultism which belonged to all this. It is easier, however, to find excuse for what was in the middle ages than to account for some of the blind superstition which we are compelled to see in the light of the close of the nineteenth century.

John Addington Symonds, on the Renaissance in Italy, observes: "During the dark ages Italy had in no sense enjoyed superiority of culture over the rest of Europe.... The more we study the history of mediæval learning the more we recognize the debt of civilized humanity to the Arabs for their conservation and transmission of Greek thought in altered form to Europe. Yet, though the Italians came comparatively late into the field, their action was decisive."

The object of the brief mention here of some historical facts of medicine and medical men of the times, before the revival of learning in the fifteenth century, is to make the advance in the time of the Renaissance to appear more clearly.

The revival of learning in the fifteenth century—the Italian Renaissance—marked the close of the middle ages. Great discoveries and political changes had opened the way for a future development. Columbus had discovered America, the Byzantine Empire had been overrun by the Turks. As a writer of history has it: "Columbus gave a new world to Europe, the irruption of the Turks an old world." It was the old world of Greek philosophy and literature revived and revised. Europe's preparation for the advance was seen in the appearance of nationalities and languages, the decline of the feudal system, the invention of paper, the mariner's compass, gunpowder, and the printing press, the exploration of continents beyond the ocean, and other inventions and discoveries.

There was a search for old manuscripts, and the manuscripts discovered by the Italian humanists or brought by the Greek exiles were now multiplied and scattered over Europe by the timely invention of the art of printing from movable type. Libraries were founded. The famous Vatican Library was established by Pope Nicholas V (1447–'55). In this period the Italian schools of medicine succeeded the Arabian. Mondino, of Bologna, had taught anatomy by dissection as early as 1315. Andreas Vesalius, of Padua, published his works on anatomy in 1543. After Vesalius were Eustachius, Fallopius, Sylvius, Pacchioni, and others, whose names have come to us attached to the parts in human anatomy first described by them.

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* Puschmann's *History of Medical Education.*

† Berdoe's *Popular History.*

Sanctorius.—Sanctorius (original, Sanctorio) was born at Capo d'Istria, Italy, in 1561; was professor of medicine at Padua in 1611, where he published his principal work; was afterward a practitioner in Venice; died in 1635. I have at hand an ancient book, the title of which reads as follows:

"*Medicina Statica. The Aphorisms of Sanctorius.* Translated into English with Large Explanations. To which is added Dr. Kiel's Medicina Statica: as also, Medico-Physical Essays on Agues, Fevers, An Elastic Fibre, The Gout, The Leprosy, King's Evil, Venereal Disease. By John Quincy, M. D.—*Pondere, mensura, & numero Deus omnia fecit.* London: 1728."

Each part of this old title is suggestive of history in the development of medical science. The authors and the works belong to what was known as the iatrophysical, mathematical, or mechanical school. A little later than the time of the beginning of this school of Sanctorius arose the iatrochemical school of Sylvius, of Leyden, and Willis, of Oxford, England, who was physician to Charles II. The study of diseases, their causes, and management in these times, made from different standpoints, helped to make the foundation and prepare the material for future building.

Sanctorius, in his teachings and writings, advocated the doctrine of the mechanical school. The motto in the title of his book is the keynote of all his teaching. Translated, it is: "God did all things by weight, measure, and number."

Dr. Quincy, defending the system in his preface to the book, has the following: "Mechanical reasoning is what is much talked of now in physick, and by some perhaps more than is well understood; but the greater professors of medicine are declared enemies to it, and make nothing of breaking their jests upon angles, cylinders, cones, celerity, percussion, resistance, and such like terms, which they say have no more to do with physick or a human body, than a carpenter has to do in making Venice treacle or curing a fever." He further gives the status of his school and its acceptance by some of the profession in words as follows: "Physical writers of late have, with a great deal of industry and success, introduced geometry into their studies, and endeavored to account for all that concerns the animal economy upon mechanical principles: and this they seem to have done, not only as the best means to get clear of all suppositions and delusory hypotheses, but also as to them, it has appear'd to be the only way by which we are fitted to arrive at any satisfactory knowledge in the works of nature. But because some herein have gone so far, as to give even occasion of offence to several who happen not to have their heads well turned this way, and who, out of some prepossessions in favour of qualities, sympathies, and antipathies and the like, cannot bear without indignation and scorn to see those great mysteries of physick, and that excellent frame which is its subject, that beautiful epitome of the creation, marked out like a spot of earth, or a piece of timber, with rule and compasses: For this reason, I say, it is, that by this Introduction is intended an inquiry into the means by which we arrive at any certainty in physick, and to show that it is not to be done without such help."

Dr. John Quincy, whose name appears in the title as the editor of this fourth edition of *The Aphorisms of Sanctorius*, and who seems to have written the preface and the introduction to the book, was a prominent London physician. He published the *Dispensatory of the Royal College of Physicians* in 1722. The *Ars de Statica Medicina* of Sanctorius, Italy, appeared in 1614. Dr. James Kiel, of Northampton, whose *Medicina Statica Britannica* is given a place in the book of Sanctorius by Dr. Quincy, was an eminent English physician (1673–1719), an original investigator, and in his experiments followed the directions of the iatrophysical school of Sanctorius and Borelli. The book of aphorisms, with Dr. Quincy's comments, represents the character and teaching of the iatrophysical or mechanical school. Beginning as it did in the times of the Renaissance, founded by Borelli, of Naples, supported and elaborated by Sanctorius, and a little later by Bellini, of Florence, we find its doctrines taught in England by Kiel, Quincy, and others, early in the eighteenth century.

Sanctorius invented various physical instruments, experimented for thirty years upon his own person to determine, principally by weight, the relations of the ingesta and excreta of the body, and determined, among other things, that a certain amount of the excreta was in the form of invisible gas or vapor. The processes of digestion were viewed from different standpoints by the physicists of this school and those of the school of chemists; the former maintaining that the action was mechanical, and consisted only in pulverizing, triturating, etc., while the latter described the chemical action of the secretions upon the ingesta, and explained physiological actions generally as belonging to chemistry. With the history of this contest in mind, and in possession of a later and more advanced physiology, a professor in later times was wont to say to his class: "The stomach, gentlemen, is not a mill; it is not a chemical retort or a fermenting vat; it is a stomach, gentlemen, a stomach!"

The book of aphorisms is given in sections.

Section I treats of "Insensible Perspiration as it appears by Weight." In what is included in these terms appears nearly the whole system. In most of the aphorisms actual weight is meant, yet in some merely the sense of bodily weight is made a guide to the indication.

Section II, "Of Air and Water." Here is written concerning temperature, the seasons, climatology, ventilation, and much of general sanitation.

Section III, "Of Meats and Drinks." The dietary;

the times, seasons, and reasons for varying it, all as bearing upon the insensible perspiration and weight.

Section IV, “Of Sleep and Watching,” and Section V, “Of Exercise and Rest.” These titles would seem to point to a physiology of the nervous system; but Aphorism 1 of the section reads: “Sound sleep so much promotes perspiration, that in about seven hours, strong constitutions will frequently perspire fifty ounces.”

Explanation by Dr. Quincy: “This much exceeds the proportions in cold climates; see Kiel's *Medicina Statica Britannica,* at the latter end hereof.”

The inevitable result of disregarding the doctrines in practice appears in Aphorism 2, of Section I: “If a physician, who has the care of another's health, is acquainted only with sensible supplies and evacuations, and knows nothing of the waste that is daily made by insensible perspiration, he will only deceive his patient, and never cure him.”

There seems to have been difference of opinion among doctors then as now. It was this time between Dr. Quincy and Dr. Kiel. Dr. Quincy, the editor, in his “explanation” of Aphorism 6, concerning the results of “taking cold,” observes as follows:

“Dr. James Kiel, of Northampton, hath, in a dissertation annexed to his *Medicina Statica Britannica,* endeavor'd to prove, that the common notion of a diminish'd perspiration being the cause of all that is ascribed to a cold, by an increase of the quantity of juices, is a mistake; and he seems to charge most of the changes made from such a cause upon the quantity of that matter which is received into the blood by the cutaneous pores, which he calls frigorifick particles, of a nitrous kind, and ascribed to them a power of chilling, condensing, and thickening the animal fluids; but the intelligent reader will not find this distinction of any importance, either as to the theory of the economy, or any practical conclusions concerning the regulation of its disorders.”

Aphorism 43: “If upon weighing, the perspirable matter appears to have been obstructed, and there is neither increase of sweat or urine for some days after, there is a great deal of danger of a putrefaction of the detained crudities.” This would seem, in part at least, to look toward a chemical theory of disease—a uræmic poisoning, or something of the kind; but Dr. Quincy comes to the rescue with the following “explanation”: “The solids will be so much oppressed by the superfluous load which is laid upon them by the retention of the perspirable matter, that unless there soon be a discharge made of it by some of the sensible evacuations, they will not be able to circulate it with so much swiftness as is necessary to prevent its falling into preternatural ferments, there being nothing which more promotes intestine motion of liquors that disposes them to putrefaction, than stagnation. For then their several parts are left at liberty to sink or rise according to their several gravities, and obey their respective attractive powers, upon which several are broke smaller, and others run into corpuscles of different kinds of properties; whereas so long as they are kept in a circulatory motion by external causes, they are not at liberty to obey their attractive powers, or their several gravities, but move on without any other alterations than what they receive from their casual occursions and attritions against one another.” Notwithstanding that the means and methods of investigation seem crude and imperfect, viewed in the light of the present, yet the discoveries and teachings of the iatrophysical school in the time of the Italian Renaissance constituted an important step in the advance of science. The iatrochemical school of the time also had its place and work. Both had their part in bringing the study of science out of mere speculation concerning material things up to methods of physical demonstration. It remained for Boerhaave in Holland, Cullen in England and Scotland, Bichat in Paris, Stahl at Halle, and the lights of the old Vienna school to make further advancement in their times, looking to the anatomy, pathology, and therapeutics of modern times.

AN IDEAL
GERMICIDE, DEODORANT, AND ANTIZYMOTIC,

POSSESSING THE SAME GERMICIDAL POWER AS CORROSIVE SUBLIMATE WITHOUT ITS TOXICITY.*

By W. S. ALEXANDER, M. D.,
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FORMALDEHYDE (H_2CO), as is well known, is a gaseous body, which is prepared by subjecting methyl alcohol to oxidation. It is readily absorbed by water, and for this reason it is put on the market in the form of an aqueous solution termed formalin.

The simplicity of its source is suggestive to the practical observer as an instance of Nature's own hygiene. Formalin is therefore not like the great number of disinfectants resting upon some corrosive acidity.

The fundamental and classic work of Koch and his coworkers, and the labor of many others, have thrown light upon the true aim of disinfection, and have established the best methods of insuring successful results. These aims are the absolutely certain destruction of all pathogenic germs in the shortest possible time, with the least expense, with a minimum of injury to the articles to be disinfected, and without detriment to the health of the persons using the disinfectants.

The methods so far devised for application to solid objects comprise: (1) Mechanical cleansing; (2) currents of steam; and (3) the use of chemical disinfectants. Passing by the first as an important but only partial method, the second may be characterized as certain if carried on for a sufficient length of time.

Unfortunately, a great number of things are too large for such treatment, others are spoiled by it, and, further, costly apparatus is necessary. As regards chemical disinfectants, there has been a conspicuous lack of substances which fulfill the requirements mentioned above. Some disinfectants are not sufficiently powerful in action, others have a disagreeable odor, which they may communicate to the articles on which they are used, and others attack objects more or less vigorously.

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* Read before the Union District Medical Association

Among the number of antiseptic substances known at present there are only a few which are capable of destroying all germs of organic life in twenty-four hours. After eliminating osmic acid, only sublimate and, under certain conditions, chlorine and bromine are left; the two latter, however, are practically of little value, and free application of sublimate is hindered by its very great poisonous qualities, as well as the fact that it is inactive in the presence of albuminoid substances.

In view of this manifest deficiency, a search was directed looking to the discovery of a compound which should have a germicidal action similar to that of sublimate without its toxicity; and which should be suitable for use not only in moist conditions, but also in a dry form (*e. g.*, as a gas). It has been proved by numerous and very elaborate experiments that after an hour's exposure to a one-per-mille solution of formalin the most resistant forms of micro-organisms were destroyed. Formalin, therefore, is equal to corrosive sublimate in germicidal power, and under certain conditions superior, when albuminoids are concerned.

Great importance is attached to the applicability of this ideal antiseptic in gaseous or vapor form. Only in this way can we conveniently disinfect large rooms and more delicate articles in closed apparatus. The experiment carried out with formalin vapor, where made with a large glass bell, in which was set a small table carrying potatoes freshly inoculated with pure cultures of typhus, anthrax, cholera, etc., and the glass bell, placed upon an iron plate which exactly closed it, showed that a two-and-a-half-per-cent. volume of formalin destroyed all traces of organic life in a quarter of an hour. Interesting observations have been made that when allowed to evaporate in the presence of wool, gauze bandages, or other dressing materials, the vapor condenses upon the fabrics in solid form (paraformalin), and this disinfects them. On evaporation again from the solid form, paraformalin was dissociated into formalin vapor, and exerted an antiseptic influence upon its surroundings. Hence, dressing materials treated with formalin are not only perfectly sterile, but can be immediately used for antiseptic dressing.

When brought into contact with the animal skin, undiluted formalin exerts a kind of tanning effect, making the skin impermeable, and finally brings about its necrosis. This action depends upon the property of formalin of very readily penetrating living tissue and dead animal tissue and forming with it a certain combination. The tissue is destroyed without suppuration or formation of a wound.

Some of the experiments establishing this property may be briefly stated. By repeatedly painting the ear of a rabbit with a concentrated solution, in ten days the ear will fall off as smoothly as if cut off and without bleeding. Quite similar is the effect upon the human epidermis. The application of this action of formalin to surgery is obvious.

Dr. de Buck and Dr. Vanderlinden, at their surgical clinic in Ghent, Belgium, employ only a half-per-cent. solution of formalin, using it for washing their hands and instruments, for cleansing the seat of operation, and for the purpose of rendering infected wounds, cavities, sinuses, and fistulæ antiseptic. The instruments were not even boiled in a sterilized apparatus. They express their entire satisfaction with the new antiseptic, and state emphatically that the half-per-cent. solution gave better results than a two-and-a-half of carbolic acid and a two-per-mille of sublimate solution.

In the first place, this formalin solution has no caustic properties. It does not hurt the instruments—not even as much as blunting the edge of the cutting instruments. The same solution was always used for irrigation when the dressing of wounds was changed; this, too, gave such satisfaction that it has been used altogether in a great many operations.

I have used it altogether in my practice for almost a year. I have no need for corrosive sublimate or carbolic acid any more.

I wish to emphasize the fact that formalin does not attack metals at all. It is the best adapted for antiseptic solutions (1 to 500) in which to keep instruments. I have had no alarming results with formalin locally; indeed, in cases of chancroid and chancre, the pure (forty per cent.) was applied without any bad results other than pain, with the benefit of rapidly healing the ulcers with a single application. I have never failed to get better results from it in skin troubles than from any other remedy. I use it by blowing it into the skin by a compressed air sprayer.

I have cured an old case of pruritus vulvæ that had been treated by many different specialists for three years. In all affections when any of the old disinfectants, such as carbolic acid, corrosive sublimate, and many others that so often cause us trouble by irritation and poison if not applied very carefully, is all lost sight of and overcome by the happy and safe use of formalin.

I have only had an opportunity to use formalin in four cases of diphtheria. I treated them all with whisky and formalin alone. I gave the whisky internally and kept the atmosphere of the room well saturated by spraying formalin, and used direct application by cotton probang to the patches. I find it can be used in sufficient strength to destroy the germs without danger to the tissue or system. It penetrates and hardens the false membrane until it entirely exfoliates in twelve hours. Cases of whooping-cough are treated successfully by spraying with an atomizer, three times daily, using a one-per-cent. solution for fifteen minutes. I have never had an opportunity to use it in scarlet fever yet, but no doubt it would prove of great utility in all infectious and contagious diseases for the following reasons: (1) It has an extraordinarily active microbic power, similar to that of sublimate; (2) it attacks only the substances of the contagious material, leaving unattacked the articles treated, whether organic or inorganic; and (3) it is very readily employed under all circumstances either as a liquid or as a gas.

Another marked advantage of the vapor of formalin is this, that its specific gravity closely approximates to that of air, so that there is no difficulty in keeping the atmosphere of an inclosed space uniformly impregnated.

For this very reason it suggested itself to me as a happy medium for catarrhal troubles. In hay fever it surpasses all other agents known. I use a half-per-cent. solution as a spray, and by taking a drachm phial and filling it with a two-per-cent. solution and allowing the patient to inhale the fumes. In this way I can come as near curing the most obstinate forms of catarrhal troubles as by all other means known. The fumes seem to reach portions that can not be penetrated by the spray or douche. I recently used it in ten cases of gonorrhœa with charming results, without the pain or irritation that we usually get from the use of sublimate and other solutions of strength enough to give the required results. I use a half-per-cent. solution injected three times daily.

In all cases of female troubles where an antiseptic solution is required as a douche, either vaginal or uterine, I can recommend it as being far superior to sublimate or carbolic acid or creolin.

I treated four cases of typhoid fever with paraformalin. All of them ran their usual course with an average temperature of 103.5° for twenty days, but in neither case were there any bowel complications.

I treated fifteen cases of infantile diarrhœa with only one death. Half a grain to a grain and a quarter at a dose every two hours.

And in conclusion I will say that I can clinically recommend formalin as being in the lead of intestinal antiseptics, and far superior to all other agents known in its sphere.

The New York Medico-surgical Society.—At the last regular meeting, on Monday evening, the 4th inst., the order for the evening included two papers entitled Diastase in Therapeutics, by Dr. C. C. Fite, and The Diagnosis and Treatment of Diseases of the Testicle and Epididymis, by Dr. Ramon Guitéras. Dr. W. L. Stowell, Dr. W. A. Walker, Dr. George Tucker Harrison, Dr. Morris Manges, Dr. William H. Porter, Dr. Charles Henry Brown, Dr. Frederick Kammerer, Dr. Parker Syms, Dr. William K. Otis, and others took part in the discussions which followed the reading of these papers.

FATAL HÆMORRHAGE FROM A SLIGHT WOUND OF THE VULVA.

By CLYDE S. FORD, M. D.,
WHEELING, WEST VA.,
LATE HOUSE SURGEON, HUDSON (CHAMBERS) STREET HOSPITAL, NEW YORK.

In chancing to go out with the ambulance in answering a hurry call, I found a case that presented some features of interest, both in regard to diagnosis and gravity of the injury.

The patient, a Hebrew woman about thirty years old, was found in the usual sitting posture, which was maintained by the combined efforts of two policemen. She was in utter collapse, and a large pool of blood at her feet gave evidence at once of a very severe hæmorrhage. She was immediately laid on the floor and a futile attempt made to get a history from her hysterical husband and friends who were in attendance. The policemen knew nothing of any injury, but kindly ventured the diagnosis of "woman's disease." The absence of any sign of injury, the bloody shoes and stockings, and the pool of blood suggested uterine hæmorrhage.

A hurried bimanual examination revealed a very lax abdomen; a vagina apparently normal, containing no blood clots; a cervix smooth, without laceration, somewhat soft, and os uteri closed; a uterus only large enough to be palpated. The legs showed no signs of varicose veins or ulcers. No source of bleeding could be discovered. There was no pulse, no conjunctival reflex, and the only sign of life was the slight condensation of the breath and an effort to swallow when a little whisky passed the lips.

Whisky was given beneath the skin and the patient was hurried to the hospital. The bloody clothing was removed and stimulants and fluids were administered.

As no positive information had been obtained from the vaginal examination when the patient was first seen, and as the bleeding still seemed to be from the vagina, the vulva was carefully inspected. A point of bleeding was plainly seen at the junction of the clitoris and the labium minus on the left side. At this site there was a lacerated wound with a flap of mucous membrane, about a third of an inch square, turned back.

As the application of artery clamps and ligatures to the several bleeding points did not stop the bleeding, the entire area was caught and tied with one stout ligature. This procedure effectually stopped the bleeding, but, as an additional precaution, the vagina was tamponed and a pad was applied so as to bring pressure over the laceration.

Normal salt solution and stimulants were injected beneath the skin and heat was applied to the extremities. The patient rallied from coma to the stage of restless, tossing, and muttering delirium, and the pulse became perceptible; but soon after she sank into coma again and died within half an hour after admission.

After her death some friends were interviewed, and the following history was obtained: The patient was thirty years old and married. Six weeks ago she was delivered of a dead child at full term, the labor not being difficult. She remained in bed one week, and since then had been up and about, but had not fully recovered her strength. At the time of the accident she was attending a theatre in company with her husband. In an attempt to change her seat from one row to another by stepping over the seats, she fell astride the back of a seat on which the vulva, doubtless, impinged, and in being pressed against the ramus of the pubic bone was lacerated. Feeling that she was injured, and alarmed at the sight of blood, she was assisted to the street. The policeman did not understand that assistance was necessary at once, so the patient was walked a block through the snow to the place where the ambulance sought her.

Thirty minutes may have elapsed from the time of the accident until the call was sent to the hospital. The ambulance reached the scene about ten minutes after the call was received, and the patient was admitted into the hospital about three quarters of an hour after the accident.

As it seemed improbable to the coroner and to the pathologist that such an apparently insignificant wound would cause a fatal hæmorrhage, a complete autopsy was made by Dr. Biggs, pathologist to the New York Hospital. The lungs showed a few tuberculous foci at the apices; the uterus was slightly enlarged, probably in a state of subinvolution, otherwise all the organs were normal except that they were pale and exsanguinated.

There was scarcely any blood in the veins.

A dissection of the vulva after the autopsy showed that the laceration had involved the pars intermedia and the veins communicating with the glans and dorsal vein of the clitoris. The veins in this region were much enlarged, the walls were thickened, and there was no tendency to collapse. The condition was, doubtless, one of subinvolution. The diagnosis after the autopsy remained as it was before. The account of the case is given just as it developed, and the difficulty of diagnosis without a history is somewhat in evidence.

The conclusion may be drawn that in hæmorrhage from the vagina it is sometimes entirely necessary, and generally quite wise, to learn by inspection what we can and to leave to digital examination what we must.

No. 2301 Chapline Street.

Therapeutical Notes.

Arecoline as a Meiotic.—Lavagna (*Bolletino della Academia di Medicina di Torino; Deutsche Medizinal-Zeitung*, November 23, 1896) has employed arecoline, an alkaloid found in the areca nut, in ophthalmic practice, and has found that it causes decided contraction of the pupil. He has used an aqueous solution of the hydrobromide, but the strength of the solution is not stated.

A Mixture for the Insomnia of Neurasthenia.—We find this formula in the *Presse médicale*:

℞ Chloral formamidate, } each...... 1 part;
Tincture of ginger, }
Mint water...................... 15 parts.

M. S.: A tablespoonful to be taken at the time of going to bed.

Iodol in the Treatment of Atonic Ulcers.—The *Presse médicale* gives the following formula for an ointment:

℞ Iodol........................ 2 parts;
Vaseline, } each................ 10 "
Lanoline, }

M. To be spread thin on aseptic lint and applied.

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IMPORTANT COMMISSIONS OF THE PAN-AMERICAN MEDICAL CONGRESS.

Before the Mexico meeting took place, we spoke of the probability of its exciting renewed interest in the medicinal plants of Mexico. That our expectation was not vain is shown by the work of the congress, which, extending its interest to the plants of South America, appointed a standing commission on the South American Flora. The chairman of this commission is Professor H. H. Rusby, and Professor Joseph P. Remington is the chairman of a commission to report upon the project of establishing a Pan-American pharmacopœia.

In the January number of the *American Journal of Pharmacy* Professor Remington remarks that the work of these two commissions is of special interest to pharmacists. It is unnecessary to add that it will be of great interest to physicians. It is to be supposed that the two commissions will carry on their work more or less in concert, for it embraces features that run into each other, the duty of investigating the plants of the entire western hemisphere, especially those of South America, and the formulation of a plan for a Pan-American pharmacopœia. According to Professor Remington, it is not intended that the new pharmacopœia shall supersede the special pharmacopœias of the various countries, but rather that the valuable features of every one of them shall be collected in it, and that an effort shall be made to make the powerful preparations uniform in strength, so that danger to life from accidental poisoning may be reduced to a minimum.

Incidentally, Professor Remington speaks with hearty appreciation of the pleasant reception that the visitors met with in Mexico and of the extraordinary interest shown by President Diaz and all the government officials, from the cabinet down, in the work of the congress. It was not alone in hospitality that the Mexican people showed their appreciation of the importance of the congress; they strove to give every possible facility to seekers after information by making public and private museums and collections freely accessible, by furnishing statistics, and the like. "Chemists, botanists, mineralogists, archæologists, paleontologists, geologists, and students in any of the related sciences," says Professor Remington, "were furnished with special guides to the valuable collections." The Mexico meeting must certainly be set down as having been satisfactory and profitable. Its work did not end with the adjournment, for its commissions will occupy themselves for the next three years with weighty matters to present to the next meeting.

THE LATE PROFESSOR SEMMOLA.

Dr. Mariano Semmola, professor of pharmacology and clinical therapeutics in the Royal University of Naples and a member of the Italian Senate, was a man calculated to make his biographers enthusiastic, as is shown in two biographical sketches of him that have recently come to our notice. The one is extracted from Signor Raffaele Alfonso Ricciardi's *Memorie biografiche degli uomini illustri italiani contemporanei,* and the other, reprinted from *Medicina contemporanea,* is by Dr. Luigi Maramaldi, of the Institute of Materia Medica and Therapeutics of the Royal University of Naples.

Many of us remember Semmola as he appeared at the Washington International Medical Congress, and not a few can call to mind his appearance at other congresses of the same series—he was present at almost if not quite all of them that were ever held. In Washington he made his polemical address on The Experimental Method in Relation to Bacteriology and to Clinical Medicine, which was published in full in this journal at the time. His biographers attribute to the American journals the declaration that that address was the capital event of the congress. It was Semmola's personality, I think, quite as much as the substance of the address, that made its delivery memorable—a personality that led Professor Pettenkofer to call him, at the International Sanitary Conference, *il mio valoroso commilitone.*

Semmola was a man not easily to be forgotten. He resembled our own Sayre—not in looks, but in demeanor—and, indeed, Dr. Sayre has more than once made before European meetings quite the same impression that Semmola made in Washington. We can well imagine that Professor Semmola was a man of weight in the Italian Senate. His life was one of achievements, and we are glad to find that he was so appreciated by his countrymen.

ITEMS.

The New York Academy of Medicine.—At the last regular meeting, on Thursday evening, the 7th inst., the order for the evening included the annual election of officers, the reading of annual reports of the officers and committees, and a paper on The Prevention of the Spread of Contagious Diseases, by Dr. H. D. Chapin, which was to be discussed by Dr. August Caillé, Dr. George B. Fowler, and others.

At the next meeting of the Section in General Surgery, on Monday evening, the 11th inst., the following papers will be read: The Ambulatory Treatment of Fractures of the Leg, with a Consideration of Some of the Complications, by Dr. James P. Fiske; and Bone Grafting for Ununited Fractures, by Dr. A. M. Phelps. Patients will be presented by Dr. John B. Walker and Dr. A. M. Phelps.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 12th inst., Dr. R. W. Taylor will read a paper entitled Fibroid Sclerosis of the Corpora Cavernosa, which is to be discussed by Dr. L. Bolton Bangs, Dr. S. Alexander, Dr. W. K. Otis, and others. Patients will be presented by Dr. C. H. Chetwood and Dr. Herman Collyer, and new instruments will be exhibited.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 5, 1897:

DISEASES.	Week ending Dec. 29.		Week ending Jan. 5.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	37	7	17	6
Scarlet fever	112	5	152	8
Cerebro-spinal meningitis	0	1	1	1
Measles	121	7	142	5
Diphtheria	190	28	267	26
Tuberculosis	161	100	226	105

The Medical Aspect of a Strike.—The *Lancet's* Berlin correspondent says: "The great strike of dock laborers at Hamburg is not only a matter of general concern but possesses some features of medical interest, as an enormous number of accidents happen in the port owing to the employment of unskilled foreign workers in place of the men who are on strike. Not being trained for the work and not being familiar with the machinery in use at the docks, these non-unionists are exposed to various risks, and the Hamburg newspapers report every day a great many severe accidents, such as fractures and lesions of the internal organs. The surgical wards of the hospitals are crowded with such patients. Another consequence of the strike is that many of the workers who suffer from chronic ailments, but would nevertheless under ordinary circumstances have continued at their employment, now throw themselves on the sick clubs, so that if the strike is of long duration the position of these clubs will become serious."

The Broome County Medical Society.—At the last meeting, held in Binghamton, N. Y., on Tuesday, the 5th inst., the following papers were to be read: A Loving Tribute of Respect to the Memory of the Late Sir Benjamin Ward Richardson, by Dr. J. M. Farrington; The Treatment of Exophthalmic Goitre, with a Report of a Case, by Dr. L. H. Quackenbush; Enlarged Prostate Cured by an Overdose of Morphine and Atropine, with a Report of a Case, by Dr. W. W. Whitney; and Diphtheria, by Dr. D. S. Burr.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 27, 1896, to January 2, 1897:*

Hall, William R., Major and Surgeon, is relieved from duty at Whipple Barracks, Arizona, and ordered to Washington, D. C., for duty.

Kneedler, William L., Captain and Assistant Surgeon. The leave of absence granted him for seven days is extended twenty-three days.

Porter, Alexander S., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Huachuca and ordered to Whipple Barracks, Arizona.

Rand, Irving W., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Clark, Texas, and ordered to Fort Huachuca, Arizona, for duty.

SHANNON, WILLIAM C., Major and Surgeon. The leave of absence granted him on surgeon's certificate of disability is extended three months on surgeon's certificate of disability.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending January 2, 1897:*

BRAISTED, W. C., Passed Assistant Surgeon. Detached from the U. S. Steamer Columbia and ordered to the Naval Hospital, Newport, Rhode Island.

EDGAR, J. M., Surgeon. Detached from the U. S. Steamer Saratoga and ordered to the U. S. Steamer Vermont.

FITTS, H. B., Passed Assistant Surgeon. Ordered to the Naval Hospital, Portsmouth, New Hampshire.

GREEN, E. H., Surgeon. Detached from the U. S. Steamer Marblehead on reporting relief and ordered to the Naval Dispensary, Washington.

MORRIS, L., Assistant Surgeon. Ordered to the U. S. Steamer Essex.

RUSSELL, A. C. H., Surgeon. Detached from the Naval Medical Examining Board, New York, on being relieved, and ordered to hold himself in readiness for the U. S. Steamer Lancaster.

WELLS, H., Surgeon. Detached from the U. S. Steamer Vermont and ordered as a member of the Naval Examining Board, New York.

WENTWORTH, A. R., Passed Assistant Surgeon. Detached from the Naval Hospital, Portsmouth, New Hampshire, and ordered to the U. S. Steamer Marblehead.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen Days ending December 31, 1896:*

WASDIN, EUGENE, Passed Assistant Surgeon. Granted leave of absence for three days from January 1, 1897. December 22, 1896.

WHITE, J. H., Passed Assistant Surgeon. Directed to inspect unserviceable property at Stapleton, S. I., N. Y. December 29, 1896.

MAGRUDER, G. M., Passed Assistant Surgeon. Granted leave of absence for nine days from December 23, 1896.

STEWART, W. J. S., Passed Assistant Surgeon. To proceed from Washington, D. C., to Colonial Beach, Va., on special temporary duty. December 26, 1896.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Medicine, on Tuesday evening, the 5th inst., the following papers were to be read: The Comparative Prevalence of Insanity, by Dr. H. G. Hopkins; Heredity as a Cause of Insanity, by Dr. William C. Krauss; The Newer Pathology, by Dr. H. Matzinger; The Symptoms of Incipient Insanity, by Dr. James Putnam; The State Care of the Insane, by Dr. Floyd Crego; The Prognosis of Insanity, by Dr. Arthur W. Hurd; and The Newer Methods of Treatment, by Dr. Harry A. Wood. A case of syringomyelia was to be presented by Dr. Crego.

Society Meetings for the Coming Week:

MONDAY, *January 11th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Maine Academy of Medicine and Science (Portland); Norwalk, Connecticut, Medical Society (private).

TUESDAY, *January 12th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private—election); Kings County, N. Y., Medical Association; Buffalo Academy of Medicine (Section in Medicine); Medical Societies of the Counties of Broome (quarterly—Binghamton), Chenango (annual), Clinton (annual—Plattsburgh), Erie (annual—Buffalo), Genesee (semiannual—Batavia), Greene (quarterly), Jefferson (annual—Watertown), Livingston (semiannual), Madison (semiannual), Oneida (quarterly—Utica), Ontario (quarterly), Oswego (semiannual—Oswego), Rensselaer (annual), St. Lawrence (annual), Schenectady (annual—Schenectady), Schuyler (annual), Steuben (semiannual), Tioga (annual), Wayne (semiannual), and Yates (semiannual), N. Y.; Norfolk, Massachusetts, District Medical Society (Hyde Park); Trenton and Newark (private—election), N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *January 13th:* New York Pathological Society (annual); New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City Hospital; Medical Societies of the Counties of Albany, Dutchess (annual—Poughkeepsie), and Seneca (semiannual), N. Y.; Tri-States Medical Association (Port Jervis), N. Y.; Pittsfield, Massachusetts, Medical Association (private); Hampshire (quarterly—Northampton) and Worcester (Worcester), Massachusetts, District Medical Societies; Bennington, Vermont, County Medical Society; Hoosick, N. Y., County Medical Society (annual—Arlington); Philadelphia County Medical Society; Kansas City, Missouri, Ophthalmological and Otological Society.

THURSDAY, *January 14th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society (annual—election); Medical Societies of the Counties of Cayuga and Fulton (annual—Johnstown), N. Y.; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *January 15th:* New York Academy of Medicine (Section in Orthopædic Surgery); Baltimore Clinical Society; Chicago Gynæcological Society.

SATURDAY, *January 16th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Births, Marriages, and Deaths.

Married.

ELLS—ELY.—In Milwaukee, on Tuesday, December 29th, Dr. Benjamin J. F. Ells and Miss Marion Angelina Ely.

LEBBY—WALSH.—In Sumter, South Carolina, on Friday, December 25th, Mr. Brewerton M. Lebby, Jr., son of Dr. Brewerton M. Lebby, of Charleston, South Carolina, and Miss Laura Walsh.

SOUCHON—BURTHE.—In New Orleans, on Monday, January 4th, Dr. Marion Souchon and Miss Marie Gabrielle Burthe.

VIALET—TEMPEL.—In Bayou Sara, Louisiana, on Saturday, December 26th, Dr. John L. Vialet, of Hope Villa, Louisiana, and Miss May Tempel.

WALLINGTON—BOND.—In Winona, Mississippi, on Wednesday, December 30th, Dr. Walter J. J. Wallington, of Scott, Louisiana, and Miss L. Bond.

Died.

CHANDLER.—In South Orange, New Jersey, on Friday, January 1st, Mrs. Jennie Chandler, wife of Dr. William J. Chandler.

MARCH.—In Winchester, Massachusetts, on Friday, January 1st, Dr. Daniel March, Jr., in the fifty-second year of his age.

NEWMAN.—In Brooklyn, on Thursday, December 31st, Dr. William Newman, aged seventy-six years.

TOWNSEND.—In New Brighton, N. Y., on Thursday, December 31st, Mr. Charles H. Townsend, father of Dr. Charles W. Townsend.

WORMLEY.—In Philadelphia, on Sunday, January 3d, Dr. Theodore G. Wormley, in the seventy-first year of his age.

Proceedings of Societies.

SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION.

Ninth Annual Meeting, held in Nashville, on Tuesday, Wednesday, and Thursday, November 10, 11, and 12, 1896.

The President, Dr. E. S. Lewis, of New Orleans, in the Chair.

(*Continued from volume lxiv, page 850*)

Splitting the Capsule for the Relief of Nephralgia.—Dr. George Ben Johnston, of Richmond, Virginia, read a paper with this title in which he drew the following conclusions: 1. Nephralgia was not always associated with a demonstrable lesion. 2. When other evidences of kidney disease were wanting the pain was due to too tight a capsule. 3. Nephralgia might and frequently did simulate symptoms of gross tissue changes or the results of mechanical irritation. 4. Where severe and persistent pain in the kidney existed without other evidences of renal disease, an exploratory operation was indicated. 5. When inspection, palpation, and needle puncture failed to disclose a condition sufficient to account for the pain, the capsule should be freely opened.

Uretero-Ureteral Anastomosis.—Dr. J. Wesley Bovee, of Washington, read a paper on this subject and reported an interesting case. The author dwelt at length upon the literature of the subject, and quoted from the contributions to the surgery of the ureters by Van Hook, Fenger, Kelly, and Cabot in this country, and the classical works of Glantenay, Liaudet, Tuffier, and others in Europe. He drew the following conclusions: 1. Uretero-ureteral anastomosis was a perfectly feasible procedure. 2. Uretero-ureteral anastomosis, whenever possible, was far preferable to any other form of ureteral grafting, to nephrectomy, and to ligation of the ureter. 3. It should be done preferably by lateral implantation or by oblique end-to-end anastomosis, though the transverse end-to-end or the end-in-end method might be safely employed. 4. Constriction of the calibre of the ureter did not usually follow attempts at suturing in closure of complete transverse section of the duct. 5. Nephrectomy for transverse injuries of the ureter *per se* was an unjustifiable operation. 6. Simple ligation of the ureter to produce extinction of the function of the kidney was too uncertain to justify its practice. 7. Drainage was not necessary if the wound was perfectly closed and the tissues were aseptic.

Dr. Howard A. Kelly, of Baltimore, said that every abdominal surgeon should be familiar with uretero-cystotomy and uretero-ureteral anastomosis, because in doing abdominal operations he might at any time injure the ureter, when he would be confronted with the necessity of doing something to repair it. Dr. Kelly then pointed out the various ways in which the ureter might be cut during operations and described the method he pursued in repairing such injuries.

Dr. Charles P. Noble, of Philadelphia, cited a case of neglected extra-uterine pregnancy complicated with an intraligamentous ovarian tumor. In the operation the intestines had been found apparently adherent over a mass of blood, and a large fleshy adhesion ran up on it. To save time this had been clamped and cut through and the pelvis cleaned out. It had been necessary to do hysterectomy in order to get anything to tie, as the anatomical landmarks had been obliterated on both sides of the pelvis. Furthermore, the broad ligaments had not come down in the usual way. When the operation had been completed the patient was in collapse, and it was found that what had been supposed to be a fleshy adhesion was really the ureter and thickened peritonæum. The ureter had been cut off almost up to the kidney itself. The lower part of the ureter had been taken out with the mass of blood, and only the upper three or four inches of the ureter was left. Dr. Noble thought that if any attempt had been made to prolong the operation with the patient in collapse, death would have resulted. Although the remainder of the ureter was short, it was dragged up into the upper end of the abdominal incision. It was impossible to do a uretero-ureteral anastomosis, or to stitch the ureter into the bladder, because it did not reach anywhere near the brim of the pelvis, much less the bladder, and there was nothing else to do but to remove the kidney, which Dr. Noble did, and the patient recovered.

The Treatment of Pregnancy and Labor complicated by Fibroid Tumors of the Uterus.—Dr. Henry D. Fry, of Washington, advanced two propositions. First, that the production of abortion was unjustifiable. Second, that labors presenting serious difficulty were best treated by abdominal section and removal of the child and tumor. By this course the interests of the mother were not relegated to the second place. While it saved the lives of many infants, the maternal mortality would also be diminished. After making a few brief remarks on the natural history of fibroid tumors complicating the pregnant state, and reporting a few cases that had come under his care, Dr. Fry considered the treatment.

Dr. A. J. Coley, of Alexander City, Alabama, reported a case of cyst on the right side with a left uterine tumor, low down, involving the body of the uterus, which was firmly fixed in the pelvis and complicated pregnancy. The woman, forty years of age, had suffered so much pain that it had been thought advisable to resort to hysterectomy, but it had not been insisted on. The woman had been married a little over a year. She had been closely watched, and, as pregnancy and labor advanced, the tumor had been pushed above the brim of the pelvis, and the woman had subsequently been delivered naturally of a child, and was now attending to her household affairs. Dr. Coley counseled against operative interference in many of these cases.

Dr. R. R. Kime, of Atlanta, had encountered a case some two years before, in a debilitated patient with evidences of infection before labor. In introducing the hand a tumor had been felt in the posterior uterine segment, crowding the cervix apparently above the symphysis pubis, and it had looked as if the patient could not be delivered. However, by waiting and placing her in the exaggerated Sims posture and elevating the growth, delivery had been effected.

Dr. Kelly agreed with Dr. Fry. There was a tendency, he said, on the part of the profession to interfere too much in cases of pregnancy complicated by fibroid tumors of the uterus. He had been called in consultation in a number of such cases, but the indications had not been such in some of them as to warrant the induction of premature labor. In many instances a consultation had been the means of postponing operative interference. When fibroid tumors complicating pregnancy were situated in the upper part of the uterine body, unless they were large and multiple, they were comparatively unimportant. If they were situated in the lower part of the uterus and it was found, as pregnancy advanced, that they could be pushed up, this should be done in order that labor might proceed naturally. On three occasions he had opened the abdomen and done myomectomy for tumors complicating pregnancy; the women subsequently had gone to full term and had been delivered normally.

Dr. W. D. **Haggard**, Sr., of Nashville, mentioned a case of uterine fibroid complicating pregnancy which had come under his observation a few years before. Hysterectomy had been advised by the consultants, but not resorted to. The woman had subsequently been delivered of a child, and the tumor six months later had entirely disappeared. Dr. Haggard reported another similar case.

Dr. **James A. Goggans**, of Alexander City, Alabama, had observed during the last twenty years a number of cases of pregnancy complicated by uterine tumors. He had seen the case referred to by Dr. Coley. He thought it was unwise to resort to hysterectomy in a great many cases, as he believed that the tumors could be pushed up and delivery effected without surgical interference.

Dr. **James McFadden Gaston** cited a case of dermoid tumor which had complicated pregnancy. The obstruction had been so great that it had been utterly impracticable to deliver the woman with the forceps, and it had been concluded to lessen the obstruction by aspirating the tumor. This had been done, and a little more than a quart of grumous material had been drawn off, after which the woman had been delivered with forceps of a dead child. Dr. Gaston believed that the woman would have to be subjected to a radical operation for the removal of the dermoid before perfect relief was afforded.

Dr. **George A. Baxter** referred to the danger of post-partum hæmorrhage in cases of fibroids complicating pregnancy, and related a case in which a fibroid tumor had interfered with the natural contraction of the uterine fibres, so that on this account it had been exceedingly difficult to arrest hæmorrhage. This was a complication which endangered the life of the woman.

The **President** said that during an experience extending over thirty-four years he had never met with a fibroid tumor which justified interference before labor, in other words, a fibroid occupying the lower segment of the uterus and encroaching upon the pelvic cavity. Within the past year he had delivered two women who had large fibroids. In one case, in which pregnancy had supervened after suspension of menstruation for two months, he had been unable for several months to ascertain the existence of pregnancy. The uterus had then reached above the umbilicus, but the woman had been found pregnant and had been delivered at full term with the forceps, but with no extraordinary difficulty. The other woman had had an abdominal tumor of the size of a six-months fœtus. Although she had been married a number of years, she was about forty when she became pregnant. The tumor had occupied the upper portion of the body of the uterus, but she had been delivered without the use of instruments. He could conceive that, in a case of fibroid situated in the broad ligament or occupying the lower segment of the uterus and seriously encroaching upon the cavity of the uterus, hysterectomy would be inevitable, but it had been his fortune to escape such cases.

Dr. **Fry** said he was glad to note that the general trend of the discussion had been favorable to conservative work in the treatment of pregnancy complicated by fibroid tumors of the uterus, and to permitting women to go to full term and trying to deliver them naturally. Some of the cases referred to in the paper, the histories of which he had not read, exemplified the wonderful resources of Nature in overcoming uterine obstructions. Post-partum hæmorrhage was one of the serious complications of labor under these circumstances, and was common. If the placenta was attached to the tumor, the hæmorrhage would be free. If it was found necessary to operate, the Cæsarean section ought not to be resorted to, as the mortality following this procedure was fully as high as eighty-four per cent. in such cases. The best thing to do was to resort to hysterectomy, by either the complete or the supravaginal method.

(To be continued.)

Book Notices.

The Practice of Medicine. By **Horatio C. Wood**, A. M., M. D., LL. D. Yale, Professor of Therapeutics and Clinical Professor of Nervous Diseases in the University of Pennsylvania, etc., and **Reginald H. Fitz**, A. M., M. D., Hersey Professor of the Theory and Practice of Physic in Harvard University, etc. Philadelphia: J. B. Lippincott Company, 1896. Pp. x–1088.

That a work upon the practice of medicine by Dr. Wood and Dr. Fitz must *ipso facto* be one of unusual merit does not require the saying, and the main object of the reviewer in such a case must be to ascertain and to point out wherein the work differs from contemporaneous works upon the same subject, for we of the present day are fortunate in the possession of a large number of treatises upon medicine, and many of them are works of great value.

The keynote to the book is struck in the opening words of the preface, wherein the authors state that the volume is the outcome of an attempt to view the practice of medicine simultaneously from the pathological and therapeutical points of view. This, then, marks its tone throughout, and, though the pathological point of view has not been neglected of late, yet its importance demands its continued contemplation, and of the therapeutical point of view, we venture to think that it has been neglected in comparison with the other. Therapeutically, the work is a contrast to many works on medicine of recent date, and it is this feature which renders it in our opinion so valuable. We venture to think, too, that none other than Dr. Wood could have given us such a work, for the part which he has played in American pharmacology needs no description.

That Wood's *Therapeutics, its Principles and Practice*, is the American authority upon its subject is generally conceded, and it is without doubt the most respected of our pharmacological works abroad; but this work has ever lacked generosity, so to speak, in practical therapeutical considerations, the so-called "applied therapeutics," though how therapeutics can be other than applied we fail to see, that practitioners and particularly students most need. In the volume under review this need is met, and its therapeutics serves to fill out and complete and make satisfying the senior author's previous writings upon this subject. That these facts should not imply an inferiority of the other portions of the work may be stated, though unnecessarily, we think, for Dr. Fitz is far too well known and esteemed as a teacher of medicine to make permissible the disparagement of his work by any comparison, and Dr. Wood as a teacher of nerve disorders is second in eminence only to Dr. Wood as a pharmacologist. The work is certainly harmonious and even throughout, but its therapeutics rather more than any other feature serves to render it unusual.

The book is singularly well written and happily clear and simple of reading and comprehension, while overlapping, confusion, and contradiction are notable by their absence. Were we compelled so to restrict our possession of works bearing upon medicine, we should consider ourselves not ill equipped in the possession of the *Practice of Medicine* of Wood and Fitz and Dr. Wood's *Therapeutics, its Principles and Practice.*

Medical Jurisprudence, Forensic Medicine, and Toxicology. By R. A. Witthaus, A. M., M. D., Professor of Chemistry, Physics, and Hygiene in the University of the City of New York, etc., and Tracy C. Becker, A. B., LL. B., Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. Volume Four. New York. William Wood & Company, 1896. Pp. 5 to 892.

This entire volume is devoted to the important subject of toxicology, and it has been written by the senior author, Dr. Witthaus, whose long experience as a teacher of chemistry and as an investigator eminently fits him for the task.

After an introduction in which there is an interesting *résumé* of the employment of poisons by different peoples from the earliest historical periods, the subject of general toxicology is reviewed. The difficulty of defining a poison is referred to, and the author makes a distinction which may be useful to a witness by dividing poisonous substances into poisons and corrosives. He classes poisoning as either endogenous or exogenous.

In the section on the statistics of poisoning the author calls attention to the inadequacy of our present police and legal methods of trying to detect criminal poisoning. This is but a defect associated with the generally condemned coroner's system.

Sufficient reference is made to the absorption of poisons, to the circumstances and conditions modifying the action of corrosives and poisons, and to the treatment and prognosis of poisoning.

While it might appear at first glance that the subject of the evidence in cases of suspected murder by poison was treated of too briefly, it must be remembered that the toxicologist has only to determine the question of whether or not the deceased died of poison, and, if he did, by what poison death was produced. From this latter standpoint the subject referred to is treated with comprehensiveness, and due instruction is given in regard to the duties of the physician in a case of suspected criminal poisoning. It is to be hoped that the reader will appreciate the advice that the practitioner of medicine not especially engaged in pathological investigations should avoid assuming the responsibilities of a medico-legal autopsy, and that the person selected to make the chemical analysis should be a chemist of experience.

Following a classification of poisons, the author enters upon an elaborate discussion of the corrosive, mineral, vegetable, animal, and synthetic poisons. Each substance is described, the symptoms following its administration, the diagnosis, prognosis, post-mortem appearances, and analytical methods for its detection are given in detail. References to celebrated cases are made throughout the volume.

The only criticism that might be made about the volume is the orthography.

A Practical Treatise on Medical Diagnosis. For Students and Physicians. By John H. Musser, M. D., Assistant Professor of Clinical Medicine in the University of Pennsylvania, etc. Second Edition, revised and enlarged. Illustrated with One Hundred and Seventy-seven Woodcuts and Eleven Colored Plates. Philadelphia and New York: Lea Brothers & Co., 1896. Pp. xii–17 to 938.

The first edition of this book was noticed in these columns at the time of its publication, two years ago. The second edition does not differ so materially from the first as to require a lengthy review. In type and in matter there is evidence that the revision has been painstaking and careful. Certain careless or obscure sentences have been corrected or amplified, and in many instances the results of recent investigations have been incorporated in order to bring the book up to date. Several colored plates, mainly of the blood and of micro-organisms, have been added. The grotesque figures from Eichhorst representing the phthisical chest, which are to be found on page 235 of the first edition, have been happily replaced by photographic reproductions from life. We can not commend such cuts as those numbered 65 and 66, representing the location of normal and abnormal impulses and thrills. They are too small, the ribs are not numbered; in short, they are not sufficiently *graphic* to be useful. It is a pity that the awe-inspiring representation of the hand of rheumatoid arthritis on page 131 should have been retained. It may be worshiped without breaking any of the commandments.

There are certain blemishes which a rather frequent use of the first edition has brought to light. The principal criticism to be made refers to an occasional redundancy of words and lack of clearness in statement, as well as a tendency to the use of many successive short and jerky sentences. Moreover, in some instances, the italicized or capitalized sentence headings and midpage headings are not happily chosen, or are deficient in completeness of expression, which in a book intended for frequent reference in doubtful cases is somewhat detrimental.

Nevertheless this treatise has been justly successful in passing to a second edition because of the large experience, the careful study, and the common sense which were brought to its composition. It is without question one of the best of the recent works upon medical diagnosis, and enjoys a deserved popularity.

An American Text-book of Applied Therapeutics. For the Use of Practitioners and Students. Edited by J. C. Wilson, M. D., Professor of the Practice of Medicine and of Clinical Medicine in the Jefferson Medical College, etc.; assisted by Augustus A. Eshner, M. D., Professor of Clinical Medicine in the Philadelphia Polyclinic, etc. Philadelphia: W. B. Saunders, 1896. Pp. 5 to 1326. [Price, $7.]

This work is certainly very exhaustive and contains much that is of therapeutic importance, but, as with many another work of similar scope, its very exhaustiveness is its worst feature, for it implies the inclusion of so much that is bygone, "sometimes effective," and therefore relatively useless, that its best features are so surrounded and, at times, almost covered by therapeutical *débris* that in spite of author and editor the usefulness of the book is impaired. In another way, the mechanical, its bulk militates against the book. Though we are aware of the general disinclination of publishers to permit a work of this kind to exceed the single volume, we can not but agree with the preface that the book "has in fact attained a bulk which would have rendered its publication in two volumes justifiable," while we cordially disagree when it further states that "a single volume has appeared, however, more convenient for reference."

That a work having a list of contributors so able as this must be meritorious is conceded, as well as the fact that in something over thirteen hundred pages some wisdom is likely to appear, but to render the work to our liking the editorial pruning knife should have been wielded far more energetically; it is regrettable that so much that is of great value should be so marred by much that is of scant use. Surely the work is not a history of therapeutics, but a text-book of "applied therapeutics." Incidentally, we are led to protest against the use of the term "applied therapeutics," for all authorities, in spirit or letter, agree that therapeutics is the application of remedies in disease; we are therefore at a loss to see how therapeutics can ever be other than applied.

With the many good things in which this book abounds there are some few which impress us as crude. The term "cholera infectiosa" is one of these. Its substitution for the time-honored cholera asiatica, it seems to us, is an advance in the wrong direction, for surely the latter term is sufficiently descriptive, and the former probably is not, unless one is prepared to evermore maintain that only cholera of this variety is infectious.

In an otherwise excellent chapter on diseases of the liver we are struck with the fact that its functional disturbances are scarcely mentioned and not at all discussed. This we think is an unfortunate omission, for, though it is true that much blame has unjustly been placed upon the liver, we are far from being of the opinion that it is invariably an innocent organ, and we are inclined to think that its frequent errors, whether of commission or of omission, should receive therapeutical correction, for its own good.

To speak of serum treatment as "the latest craze" is rather extreme perhaps, for, if serum treatment has often failed, it has sometimes brilliantly succeeded, and gratitude, even if tinctured with an occasional feeling of disappointment, might suggest a less unkind epithet. The connection in which the term appears, however, may excuse its severity, for the treatment of diabetes with pancreatic extract (if that can be called a serum, which we doubt) has certainly proved a delusion, though it consumed a year of experimentation to bring conviction on this point.

Many illustrations enrich the book, and as a rule they are good, though some few scarcely convey the forcible instruction intended. The cut of a "reclining chair" depicting the ordinary steamer chair is a little unnecessary perhaps, though it can not approach the height of absurdity attained by a recent publication wherein is published the portrait of a glass rod.

It would be unjust not to notice the spelling with which the book abounds. It is of the variety sometimes spoken of as Philadelphia Volapük from the fact that its birth is credited to the City of Brotherly Love. It is difficult to describe its beauties aptly, for it does not appear to conform arbitrarily to rule, but among its chief features are a warfare against diphthongs and a pronounced antagonism to conventional terminations, a fact which leads to their invariable mutilation or amputation at sight. It is noteworthy, however, that the editor generously "assumes entire responsibility for certain departures from conventional modes of spelling," a fact for which he must receive due credit when we fully realize his heroism. It is a thorough vindication of the contributors, however, and since it must protect them from unmerited ridicule, will doubtless be rated by them, as it is by us, as a sort of fanatical martyrdom.

A Text-book of Bacteriology, including the Ætiology and Prevention of Infective Diseases, and a Short Account of Yeasts and Molds, Hæmatozoa, and Psorosperms. By EDGAR M. CROOKSHANK, M. B., Professor of Comparative Pathology and Bacteriology, and Fellow of King's College, London. Fourth Edition, reconstructed, revised, and greatly enlarged. London: H. K. Lewis. Philadelphia: W. B. Saunders, 1896. Pp. xxx–715. [Price, $6.50.]

WHILE the title page apprises the reader that this is a new edition, the author has made such revisions and additions that it is practically a new work. The volume is divided into three parts. The first part treats of the most recent methods employed in studying bacteria and in investigating the ætiology of disease; the second part deals with infective diseases and the bacteria associated with them; and the third part contains descriptions of some five hundred bacteria. The addition of twenty-six chapters and a hundred and thirty-three illustrations makes this volume of almost twice the size of its predecessor. Many illustrations have been substituted for those contained in the third edition, a large number of which have been drawn from the author's preparations, and many of the cuts are colored.

In the chapter on the effects of antiseptics and disinfectants we are surprised to note that no reference is made to the work of Welch, which has effected so great a change in surgical procedures in the United States.

The chapter on the chemical products of bacteria might be elaborated with advantage to the student, especially in regard to the tests for the more important ptomaines.

While the author refers to the various theories o that immunity, he commits himself no further than to the probability that immunity is independent of phagocytosis, and that the condition is, in all likelihood, due to the accumulation of antitoxines in the blood.

The chapter on antitoxines and serum treatment describes the method of preparing diphtheria and tetanus antitoxines, and reference is made to antistreptococcic and antityphoid-fever serum.

Bacteriological methods of examination of air, soil and water and the photography of bacteria are clearl and succinctly described.

The chapter on the ætiology and prevention of th infective diseases treats of diseases affecting animals a well as those of man, and will prove of great practica value to health officers in connection with the method essential to limit and terminate an epidemic.

The classification and description of bacteria in th third part of the book necessarily include a number of organisms of no practical importance which are described in order to make the volume complete.

There is an appendix devoted to yeasts and molds, one that describes the *Hæmatozoa,* one that refers to amœba and *Coccidia,* and one composed of copious extracts from the final report of the royal commission to inquire into the subject of vaccination.

The bibliographical references are numerous, though mention is not always made of the volume and page, a matter of some importance in journalistic literature.

The work has evidently received careful supervision, and it may be commended as an excellent text-book for colleges and as a work of reference for health officers and others interested in this particular line of scientific research.

A Manual of Pharmacology and Therapeutics. By William Murrell, M. D., F. R. C. P., Physician to and Lecturer on Pharmacology and Therapeutics at the Westminster Hospital, etc. Revised by Frederick A. Castle, M. D., etc. New York: William Wood & Co., 1896. Pp. vi–516.

The revision of Murrell's *Pharmacology and Therapeutics* by Dr. Castle has resulted in a work which will be of the greatest usefulness to students, for it presents the contained matter in a form so available and so well arranged that one gets pleasure as well as profit from its perusal. To the bulk of the book written by Dr. Murrell there have been added various matters by the reviser. These have added much to the value of the work, and include not merely matters of importance to us as working under the *United States Pharmacopœia,* but also matters of interest and importance to all as physicians; noteworthy among these are the additions upon the subjects of mineral waters and of climate, which, though taken from and credited to the works of other writers, are wisely so taken, since the sources are authoritative beyond criticism. Throughout the work, too, there appear editorial insertions reflecting the views of the reviser, and these indeed, to us, make the work the more valuable, while at the same time they are neither so numerous nor so artificial as to suggest meddlesome editorship or ever to invalidate or mar the excellence of the original.

We rate as unusually meritorious the introduction of this work (though called introduction, it might with propriety be called Part I of the work, for, while its aim and object are introductory, it contains one third of the book's matter). It is in the preliminary considerations that many writers upon pharmacology fall short. While they may well present the cold and hard facts concerning drugs individually, they fail to present properly general therapeutic considerations and curative procedures other than drugs, as well as those generalizations of the art of treatment of which the student can so ill afford to be ignorant. In this particular the work of Murrell excels. The book has impressed us most favorably, and we look for its successful career. As a text-book it should certainly serve far better than many now in general use. The size of the volume is convenient for use and the book-making is excellent.

Rheumatoid Arthritis: its Pathology, Morbid Anatomy, and Treatment. By Gilbert A. Bannatyne, M. D. Glas., M. R. C. P. Ed., Hon. Physician to the Royal United Hospital, etc. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent, & Co., Ltd., 1896. Pp. xii–173. [Price, 7*s.* 6*d.*]

Although Dr. Bannatyne has given us in this little book a very interesting presentation of the subject of rheumatoid arthritis, both historical and clinical, it can not be held that the subject, for all that, is more elucidated than it has been heretofore, at least conclusively. His contention that the disease is due to micro-organic infection is interesting and plausible, and, moreover, his views seem supported by the evidence obtained from a number of cases, a bacillus having been found in the synovial fluid present which is peculiar in its reaction to staining agents and can easily be cultivated. The absence of this organism from the synovia of joints distended from other causes is also in support of the view held by the author, but sufficient data are as yet lacking, we think, to make final conclusions warranted.

With the theory of micro-organic causation as a foundation, the pathology and symptomatology of the disease are superimposed thereon. The author very frankly admits the possibility that the near future will demand a revision of his work, and, while to some degree skeptical of the soundness of his position, in the absence of more conclusive proof, we heartily commend his moderation and good judgment, awaiting the further development of what may be a most important discovery.

Physics for Students of Medicine. By Alfred Daniell, M. A., LL. B., D. Sc., F. R. S. E., Advocate and Barrister-at-Law, etc. London and New York: Macmillan & Co., 1896. Pp. xvi–469. [Price, $1.25.]

Much useful information is to be obtained from this little volume if it is read in course, but for hasty occasional reference it would be much more serviceable if it had an index. The table of contents, to be sure, is quite full, but that can not take the place of an alphabetical index.

Rheumatism: its Nature, its Pathology, and its Successful Treatment. By T. J. Maclagan, M. D., Physician in Ordinary to their Royal Highnesses Prince and Princess Christian of Schleswig-Holstein. Second Edition. London: Adam and Charles Black, 1896. Pp. xiii–324.

Although the first edition of this work appeared fifteen years ago, our advances in the field of the investigation of rheumatism have not been of sufficient brilliancy to render invalid anything of moment which the first edition contained. To be sure, the treatment of rheumatism with the salicyl compounds was then in its youth, but the youth was one of the utmost promise, and fifteen years have served but to convince the few remaining skeptics of that day. The theorizing which the first edition contained as to how and why the salicylates were thus effective remains to-day unproved and, on the other hand, uncontradicted, for, though it is easy to regard these drugs as corrective and antidotal to a supposititious poison, and rational to compare their action to that of quinine in malarial infection, it is scarcely conclusive reasoning when we remember that our knowledge of what the rheumatic poison may be is no greater to-day than it was in 1881.

It may be that the reader of the present day, in view of these facts, and possessed of the information which more recent text-books give, will fail to appreciate the importance of a work like this. If he does he is in error, for there is just enough of the past in the work to make the present the more valuable and instructive; moreover, it is a most thorough and able discussion of the subject regarded from all sides, and presented and written with a charm and beauty most unusual in a medical book and almost unknown in those of the present time.

BOOKS, ETC., RECEIVED.

The Diseases of the Male Urethra. By R. W. Stewart, M. D., M. R. C. S., Surgeon to Mercy Hospital, Pittsburgh, Pa. New York: William Wood and Company, 1896. Pp. viii–221. [Price, $2.50.]

The Principles of Theoretical Chemistry, with Special Reference to the Constitution of Chemical Compounds. By Ira Remsen, Professor of Chemistry in the Johns Hopkins University. Fifth Edition. Thoroughly revised. Philadelphia and New York: Lea Brothers & Co., 1896. Pp. x–13 to 326. [Price, $2.]

Skeletlehre. Bearbeitet von Professor Dr. J. Disse, in Marburg, Professor Dr. Graf Spee, in Kiel, Dr. Mehnert, in Strassburg, und Professor Dr. Pfitzner, in Strassburg. Abtheilung II. Kopf. Von Professor Dr. Graf Spee, in Kiel. Mit 102 theilweise mehrfarbigen Original-Holzschnitten. Jena: Gustav Fischer, 1896.

Handbuch der physiologischen Optik. Von H. von Helmholtz. Zweite umgearbeitete Auflage. Mit zahlreichen in den Text eingedruckten Holtzschnitten. Hamburg und Leipzig: Leopold Voss, 1896.

Der praktische Arzt als Augenarzt. Kurzes Handbuch für praktische Aerzte und Studirende. Von Dr. med. J. Hell, in Ulm. Ravensburg: Otto Maier, 1897. Pp. v–118.

Reference-book of Practical Therapeutics. By Various Authors. Edited by Frank P. Foster, M. D., Editor of The New York Medical Journal and of Foster's Encyclopædic Medical Dictionary. In Two Volumes. Vol. I. New York: D. Appleton and Company, 1896. Pp. viii–652.

Transactions of the Medical and Surgical Faculty of the State of Maryland. Ninety-eighth Annual Session, held in Baltimore, April, 1896. Transactions of the American Otological Society, Twenty-ninth Annual Meeting, held in New London, Conn., July 14, 1896. Vol. VI, Part III.

Fifth Annual Report of the New York Throat and Nose Hospital with Eye and Ear Department and Separate Wards for Consumptives. 1896.

A Peculiar Affection of the Membrane of the Lips and Oral Cavity. By J. A. Fordyce, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

On Movements of the Eyelids associated with Movements of the Jaws and with Lateral Movements of the Eyeballs. By Harry Friedenwald, M. D., Baltimore. [Reprinted from the *Johns Hopkins Hospital Bulletin.*]

An Experimental Study of the Respiratory Functions of the Nose. By J. L. Goodale, M. D., Boston. [Reprinted from the *Boston Medical and Surgical Journal.*]

Reform in the Government of Medical Schools. By Eleanor H. Hiestand-Moore, M. D., Woodbury, N. J. [Reprinted from the *Proceedings of the Alumnæ Association of the Woman's Medical College of Pennsylvania.*]

The Sequels of Disease. Being the Lumleian Lectures delivered in the Royal College of Physicians, 1896. together with Observations on Prognosis in Disease. By Sir Dyce Duckworth, M. D., LL. D., Fellow and Treasurer of the Royal College of Physicians, etc. London, New York, and Bombay: Longmans, Green, and Co., 1896. Pp. x–227.

Compressed-Air Illness, or So-called Caisson Disease. By E. Hugh Snell, M. D., B. Sc. Lond., Diplomate in Public Health of the University of Cambridge, etc. London: H. K. Lewis, 1896. Pp. viii–251. [Price, 10*s.* 6*d.*]

Two Health-seekers in Southern California. By William A. Edwards, M. D., Fellow of the College of Physicians of Philadelphia, etc., and Beatrice Harraden, author of Ships that Pass in the Night, etc. Philadelphia: J. B. Lippincott Company, 1897. Pp. 5 to 144. [Price, $1.]

Margins. Collected Poems. By Dr. Francis Brooks. Chicago: Searle & Corton, 1896. Pp. 5 to 80. [Price, 75 cents.]

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Third Annual Report of the Board of Managers of Craig Colony to the State Board of Charities, for the Fiscal Year ending September 30, 1896.

Adeno-myoma Uteri Diffusum Benignum. By Thomas S. Cullen, M. B. (Tor.). [Reprinted from the *Johns Hopkins Hospital Reports.*]

Fatal Puerperal Sepsis due to the Introduction of an Elm Tent. By Thomas S. Cullen, M. D. [Reprinted from the *Johns Hopkins Hospital Reports.*]

Pregnancy in a Rudimentary Uterine Horn. Rupture, Death, Probable Migration of Ovum and Spermatozoa. By Thomas S. Cullen, M. D., and G. L. Wilkins, M. D. [Reprinted from the *Johns Hopkins Hospital Reports.*]

Adeno-myoma of the Round Ligament. By Thomas S. Cullen, M. D. [Reprinted from the *Canadian Practitioner.*]

Multilocular Adeno-papillo-cystoma of the Ovary. By Thomas S. Cullen, M. D. [Reprinted from the *American Journal of Obstetrics.*]

A Report of a Case of Typhoid Fever complicated by Extra-uterine Pregnancy. By James B. Herrick, M. D. [Reprinted from the *Medical News.*]

Nervous Shock and Disease of the Nervous System as a Cause of Pernicious Anæmia. By James B. Herrick, M. D. [Reprinted from the *Journal of the American Medical Association.*]

On the Importance of Physical Signs other than Murmur in the Diagnosis of Valvular Diseases of the Heart. By James B. Herrick, M. D. [Reprinted from *Medicine.*]

Myxœdema. A Case Treated by Thyreoid Extract. By John Woodman, M. D. [Reprinted from the *Medical Record.*]

Blood Staining. By J. C. Da Costa, Jr., M. D., Philadelphia. [Reprinted from the *Microscopical Bulletin.*]

Report of the Commissioner of Education for the Year 1894 to 1895. Volume I, containing Part I.

Thyreoid Therapy. By James B. Herrick, M. D. [Reprinted from *Medicine.*]

The Use of Nitrate of Silver in the Pharynx. By

Lewis S. Somers, M. D. [Reprinted from the *Medical and Surgical Reporter.*]

Aural Herpes. By Lewis S. Somers. [Reprinted from the *American Medico-surgical Bulletin.*]

Practical Points regarding the Senile Insanities, with Special Reference to Prophylaxis and Management. By Ralph Lyman Parsons, M. D. [Reprinted from the *Medical Record.*]

Objections to and Criticisms on the Majority Report of the Committee of the Medico-legal Society on the Existing Law for the Commitment of the Insane. By Ralph Lyman Parsons. [Reprinted from the *Medico-legal Journal.*]

Recent Aids in the Differential Diagnosis of Typhoid Fever. By Charles Lyman Greene, M. D. [Reprinted from the *Medical Record.*]

Transfusion, Infusion, and Auto-transfusion. Their Comparative Merits and Indications. By August Schachner, M. D. [Reprinted from the *American Practitioner and News.*]

An Improved Surgical Bed. By August Schachner, M. D. [Reprinted from the *Annals of Surgery.*]

Lumbar Puncture of Subarachnoid Space, with a Report of Cases. By Ralph Jay Wenner, M. D. [Reprinted from the *Cleveland Journal of Medicine.*]

A Method of Examining the Pelvic Contents which renders Exploratory Laparotomy Unnecessary in Inflammatory Conditions of the Annexa Uteri, and in Certain other Diseased States of the Pelvic Viscera. By William R. Pryor, M. D. [Reprinted from the *Medical Record.*]

Antidiphtheritic and Antistreptococcic Serums. Their Nature, Method of Production, and Application for the Relief of Disease. By C. C. Fite, M. D. [Reprinted from the *Maryland Medical Journal.*]

Remarks on the Causes of Glaucoma. By Leartus Connor, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Public Water Supply for Small Towns. By M. A. Veeder, M. D. [Reprinted from the *Transactions of the American Microscopical Society.*]

Gastrostomy by a Circular Valve Method. By Emanuel J. Senn, M. D. [Reprinted from the *Journal of the American Medical Association.*]

New Inventions, etc.

AN AUTOMATIC INHALER FOR ADMINISTERING CHLOROFORM IN OPERATIVE OBSTETRICS AND SO-CALLED OBSTETRIC ANÆSTHESIA.

By Eugene Carolan, M. D.,

BROOKLYN.

The practitioner is often so placed, when attending a case of labor where it is necessary to use instruments or perform version, as to be unable to procure skilled medical assistance.

After being in the above predicament many times, it occurred to me to devise the apparatus I wish to bring to the notice of the profession.

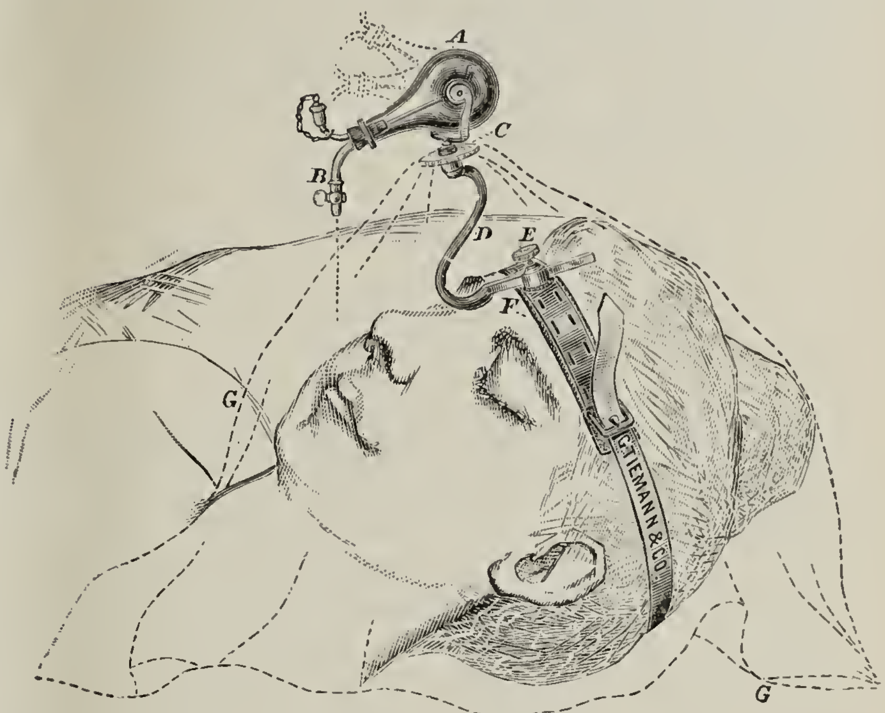
It is simple in construction and yet effective in carrying out the object for which it is intended. It is composed of three parts—namely, a headband (*F*), a support (*D*), and a bottle (*A*). The headband is secured around the patient's head; the support is pushed through a staple in the centre of the headband and fastened by a screw (*E*).

When the support is in place it projects upward about three inches over the face.

It is now ready to receive the bottle, which has a screw (*C*) attached to its clamp. The screw on the bottle is first thrust through the middle of an ordinary towel, shown by dotted lines (*G*), and the bottle is screwed on to the support. The towel is spread over the face, forming a canopy, and making a large air chamber, so that the patient breathes comfortably.

The bottle, which is of the flask pattern, is made to hold an ounce of chloroform.

It works on a swivel joint and can be turned in any direction, so as to direct the drops over the patient's mouth in case she turns her head. The stopper of the bottle has two projecting tubes diverging from the centre—the upper one to admit air; the lower one, acting as a stopcock (*B*), regulates the dropping of the chloroform at the will of the operator. As the safety in administering chloroform depends upon a gradual inhalation of a small amount of the drug abundantly diluted with air, the automatic inhaler has those advantages to commend it.



If it is necessary for me to chloroform the patient to the surgical degree, I regulate the stopcock so that thirty or forty drops escape to the minute. All sensation is abolished in less than five minutes. If at any time you wish to see the patient's face, you can turn a corner of the towel up, although this is not necessary if you have the patient's chest exposed; you can watch her respirations, immediately turning the bottle upward if her breathing becomes stertorous.

In using this instrument, see that the patient's head is lowered and that the garments are loosened at the neck and waist.

It is a well-known fact that a woman in the throes of labor can tolerate larger quantities of chloroform vapor than she can in any other condition—the increase in vasomotor tension which accompanies childbirth antagonizing to a certain extent the toxic effects of the agent. This instrument is of practical utility in the so-called obstetric anæsthesia. In the first stage of labor, where there is a rigid, non-dilatable os uteri, and at the same time severe pain, a few drops of chloroform let fall over the mouth just before a pain will mitigate its severity and relax the os uteri. This also applies to a rigid pelvic floor, where the head is descending with great force and a liability to rupture of the soft parts is imminent. The chloroformization pushed to the surgical degree will prevent laceration of the pelvic floor. It has been said that chloroform inhalations prolong labor, produce uterine inertia, and favor post-partum hæmorrhage. If used at the beginning of labor and in too large a quantity, they may retard labor and weaken the pains, causing a certain amount of uterine atony. I have never seen a case of post-partum hæmorrhage due to chloroform anæsthesia.

Any flaccidity of the uterus that may remain after the second stage of labor can always be rectified by friction with the hand over the uterus and the use of ergot internally or subcutaneously.

George Tiemann & Co., New York, are the makers of this inhaler. It is cheap, is easily made aseptic, and can be carried in the pocket.

946 BEDFORD AVENUE.

Miscellany.

The Diagnostic Value of the Serum of Typhoid-fever Patients.—Mr. Herbert E. Durham, F. R. C. S., contributes an article on this subject to the *Lancet* for December 19th in which he states that both Dr. Widal and Dr. Grünbaum have recently and independently directed attention to the possible use of the serum of patients suffering from typhoid fever in a new method of diagnosis of the fever by means of the clumping or agglutinative effect upon living typhoid bacilli. These researches, he says, naturally followed upon the investigations published by Professor Gruber and himself. Their observations have been made with the view of seeing whether the serum of individuals, healthy or suffering from other diseases, was endowed with an agglutinative power upon the typhoid bacillus. His own observations, which were begun independently early last summer, were undertaken on other lines—namely, to see whether a positive reaction could be obtained in all cases of undoubted typhoid fever. It is clear that if positive evidence is not obtainable in all instances the diagnosis can not be absolutely fixed in cases of doubt. Dr. Grünbaum, says Mr. Durham, has shown that in conditions other than typhoid fever the blood serum has no positive effect upon the typhoid bacillus when it is sufficiently diluted; Dr. Widal's observations agree in so far as he has apparently used dilutions only of about one in ten. The author states that this is in accordance with his own extended observations upon animals immunized against various kinds of microbes, in which it appears that in high dilutions (from one to five per cent.) positive reaction is only obtained with the same microbes or kinds very closely allied to those used in immunizing the animal from which the serum was obtained. His observations upon typhoid fever in man show that positive results are not invariably obtainable, consequently some cases will remain doubtful even with this addition to the means of diagnosis. All the author's cases were clinically typical cases of typhoid fever, and, he says, they therefore stand or fall together. The acuteness or mildness of the attack and the occurrence of relapses do not appear to be factors which necessarily conduce to the amount or presence of typhoid "agglutinins" in the serum. Further, a doubtful case was examined (if typhoid fever, the case was tested in the third week during pyrexia—temperature 104° F.), but no definite reaction was obtained.

The reaction is not always obtainable either during the original attack or during relapses, or after them. However, the study of the serums of immunized animals (rabbits, etc.) shows that they have little or no clumping action shortly after the first immunizing inoculation, and the typhoid fever patient or convalescent is really *only immunized to a very slight degree*—a degree, however, which is generally sufficient to protect him from further attacks.

A note upon the method may be added, continues the author, since Dr. Widal suggests such heroic measures as removing the blood by means of a hypodermic syringe thrust into a vein of the arm. Ample blood may be obtained from the lobule of the ear without giving pain to the patient; moreover, without contamination with microbes. The lobule of the ear is well cleaned with lysol solution (two per cent.), dried, and a small incision made with an ordinary clean bleeding lancet; a fine sterile pipette is applied to the exuding drop of blood. When sufficient blood is obtained (from 0.2 to 0.3 of a cubic centimetre is enough, but more is easily withdrawn if necessary) it is blown out into a sterile test tube which is held horizontally so that the blood does not flow to the bottom. The test tube is laid down flat until the blood is thoroughly and firmly clotted; it is then placed upright and the clear serum trickles down to the bottom of the tube; this requires several hours. Clear serum can be obtained more rapidly by allowing the tube to lie horizontally for about half an hour, and then placing it in a centrifuge, which is driven quite slowly for five or ten minutes; if the rotations are too rapid a certain number of red corpuscles are carried out with the serum, but even then clear serum is obtainable as the corpuscles are driven to the bottom. A dilution containing from five to six per cent. of serum is best adapted for testing; this is most conveniently done by taking up from twenty-five to thirty cubic centimetres by means of a graduated capillary pipette and adding 0.5 of a cubic centimetre of the broth emulsion of bacilli in a small test tube. Measuring may also be done by means of drops, though of course less accurately. The specimens should be examined microscopically in hanging drops after from ten to thirty minutes for the detection of clumps. In general the naked-eye reaction is not so well marked as in the case of highly immunized animals. A sample of the emulsion should always be kept as a control, without the addition of serum. Only young (from twenty-four to thirty hours) and vigorous cultures, preferably on agar, should be used; old and weak cultures often give some clump formation without the addition of serum. Lastly, the emulsion should not contain too many bacilli; a small loopful (from two to three milligrammes) is quite sufficient for each cubic centimetre.

Mr. Durham thinks that in recent cases of typhoid fever an absolute diagnosis can not always be obtained by means of the serum test, but this means of diagnosis should not therefore be discarded, or should it be allowed to fall into discredit by overrating its real value.

Practical Hints to Medical Men on the Preservation of their own Health.—Mr. John W. Teale, F. R. C. S., contributes a paper to the *British Medical Journal* for December 19th in which he offers a few practical suggestions in regard to the health of physicians, which, he says, is valuable not only to their families and patients, but to themselves. What would most conduce, in his experience, to the success of a general practitioner are power of concentration and command of temper.

By power of concentration, he says, he means that power by which a man, however wearied, on entering a house is able at once to abstract his brain from everything that has gone before, and to concentrate his mental faculties on the case that is before him. Patients are naturally somewhat selfish, and are very quick to observe if they do not get full attention, and if, when the finger is on the pulse, the mind is with the patient that preceded him.

Secondly, command of temper. To the quick, high-strung sensitive man, exhausted by the worry and anxiety of daily life, thorough command of temper with testy, querulous, exacting patients can be obtained only by rigid self-control begun in early life. To be for ever bearing in mind that the patient is the sufferer, that testiness and ill-temper are due to physical weariness and distress, and not to disloyalty to the doctor, is a task that will try the strongest nature.

If, then, asks Mr. Teale, concentration and command of temper are essential to success, how can they best be cultivated and obtained? Surely by living as far as possible a simple, healthy outdoor life, in constant physical training. Young men nowadays, as a rule, at some period of their student life pass a year or two in a high state of training, but how many of them, amid the worries and distractions of a busy practitioner's life, keep up that condition of training to mid-life, still less to old age? Why, he asks, should a man become stout and short of wind because he has reached fifty? Simply because he is struggling with his life work when his physical condition is not fit to grapple with it.

Assuming that a man is physically sound, and has cultivated athletic exercises in youth, it is quite surprising how easily that condition can be maintained provided only it be done regularly. Mr. Teale says he has been told that the "strong men" who exhibit in public rarely practise their feats in private, and rely on light dumb-bells to keep them in good condition.

He thinks that for most men light Indian clubs, or the Ranelagh, or exercises on both of them, carried out systematically night and morning, will do all that is needed. It is surprising what a rest, after a hard day's work, some active physical exercise with the arms will be found to be. It is a mistake to suppose that the busy man wants a great deal of physical exercise. His ordinary day's work, with what it involves in taxing mind and body, is generally nearly enough for him, with some physical exercises as suggested. It is always well to have something in hand, for extra strain comes most unexpectedly. It is well to cultivate the art of sleeping for a few minutes at any time. A man can live safely only on the interest of his vital strength. Any withdrawal of principal should be promptly replaced.

For a sound man, the author continues, everything hat is good is wholesome, taken at proper times and in proper quantities. We should understand that within hese limits every good thing well cooked is good for he stomach. After a man is twenty-five or thirty he wants only as much food as will maintain his weight, and not add to it. It is possible to be too busy to dine, n which case a cup of soup, or a sandwich and glass of wine, is better than a hearty meal. A good dinner implies leisure for digestion. Half-an-hour's leisure before dinner will often enable a man to eat a hearty meal. For most medical men the author believes a late dinner is preferable, for if dinner is taken in the middle of a doctor's work either the meal or the patients must suffer. The fewer the meals the better the health. Two good meals and a moderate one are enough for most healthy men leading a busy life.

With regard to stimulants, says Mr. Teale, wines may be mixed, provided they are good and too much of them is not taken. Spirits are useful when a person is jaded or exhausted, as a change from wine at dinner, but they are unnecessary and hurtful when taken between meals or at bedtime, except for special reasons; three hundred and sixty-five glasses of whisky taken in a year at bedtime are an unnecessary and severe tax on the liver when its work is in full swing.

An ordinarily healthy man may have a cold bath daily almost up to any age, but, as the object is not only to get up a reaction, but to maintain it, most hard-working men require a fire and a hot bath towel. If this is followed by a course of Indian clubs in his flannels, a man will be fit to face any weather.

Mr. Teale thinks that the same underclothing should be worn winter and summer and only the outer clothing varied. Colds are generally caught either in ill-warmed rooms or through ill-protected feet. If a physician is chilled through by a cold drive, he should walk home if possible for the last mile or two, keeping on his heavy wraps to restore circulation.

Medical men often run the risk of sleeping in badly aired beds, and the strongest constitution can not stand such an infliction. To guard against this, a light flannel dressing-gown should be worn to prevent contact with the damp sheets. A fire should be lighted whenever it is possible, for it is the best and cheapest health-giver in the world; with a well-arranged fireplace, says Mr. Teale, most healthy people can learn to sleep with their window open in winter as well as in summer.

No amount of precaution can make turning out of bed at night other than dangerous, and Mr. Teale advises that a cup of hot milk with a teaspoonful of brandy be taken in order to reduce the risks to a minimum.

Concerning recreation, the author goes on to say that every medical man requires an outdoor sport of some kind, and should have it, if possible. Golf and cycling are good, but he thinks that fly-fishing is the best of all. It takes one usually into the country, the exercise is gentle and varied, the interest is absorbing, and it is far better than hurrying half over Europe in a second-class railway carriage in search of a change of air and scene.

The Rhachitic Facies.—The *Presse médicale* for December 16th contains an abstract of an article by M. F. Regnault which was published in the *Revue mensuelle des maladies de l'enfance* for November, 1896. The writer states that while the author was making an examination of the crania and, in a more general manner, of the heads of rhachitic persons, he noticed a certain number of peculiarities which had not been observed at previous examinations.

Contrary to Grisolle and Lannelongue, he does not admit an increase of the cranium in size; according to him, the cranium does not appear to be large except as compared with the stunted body, and especially with the face.

Rhachitis leads to brachycephalia. The pressure of the child's head in the dorsal posture is exerted, in reality, only near the occipital region, the soft bones of which are depressed. But this is only a temporary deformity; the ulterior development of the brain corrects it.

The face does not escape in rhachitis, and Grisolle and Reclus have insisted on the small size of the face and on the prominence of the cheek bones. The author calls attention to the shrinking of the lower part of the upper jaw in its transverse diameter; the exaggeration of the canine fossa causes the intermaxillary bone to protrude all the more in front. This very characteristic deformity is persistent, and sometimes is the only manifestation of rhachitis; it is not, however, peculiar to this disease, for it may be found in osteomalacia and in syphilitic caries with destruction of the nasal fossæ; the concomitant symptoms in these particular cases enable one to assign it to its true cause. An attentive observation is sufficient also to distinguish it from senile atrophy of the upper jaw and from the deformity caused by adenoid growths.

The atrophy of the upper maxillary bones leads to modifications of the shape of the orbit. Its vertical diameter is enlarged and the lower wall of the orbital cavity, instead of being horizontal, becomes very oblique downward and outward. The orbital index is large, comparable, in a degree, to that which has been observed, although due to different causes, in hydrocephalus.

The Medical Schools of New York and the Public Hospitals.—The following preambles and resolutions were presented before the last meeting of the Medical Society of the County of New York:

Whereas, during the year 1895 the previous board of commissioners of charities dismissed the members of the medical staffs of the City, Fordham, Gouverneur, Randall's Island, Workhouse, Almshouse, Maternity, and Nervous Diseases Hospitals, replacing them by nominees of the three medical schools of this city, to wit, the College of Physicians and Surgeons, the University Medical College, and the Bellevue Hospital Medical College, and

Whereas, the commissioners of charities and correction have not rectified the injustice done by their predecessors during the past year, notwithstanding that frequent and repeated petitions have been made to them so to do, and

Whereas, the medical profession is satisfied that no permanent or equitable arrangement can be arrived at under the present condition of affairs, and that, if matters are left in their present condition, these positions will be a continued source of ill-feeling in the profession and of annoyance to the commissioners; therefore

Be it resolved that it is the opinion of the Medical Society of the County of New York, as the legal representative of the medical profession of this county, that all medical positions, salaried as well as unsalaried, which are within the present gift of the commissioners of charities, be taken away from said commissioners and from the medical colleges, and be placed under the control of the municipal civil service of the City and County of New York, to the end that fitness and merit, and not political nor collegiate favoritism, shall be the tests for appointment in the medical positions of the municipal service; and

Be it further resolved that this resolution be referred to the comitia minora of the Medical Society of the County of New York, with instructions to draft a bill for presentation to the Legislature at an early moment, and to consult or co-operate with any body or bodies that it may think proper, to secure the objects proposed by this resolution.

The Hebrew Sheltering Guardian Society Orphan Asylum.—The following was received too late for insertion in our last issue:

"The medical report in the recently issued *Annual Report of the Hebrew Sheltering Guardian Society Orphan Asylum* was made without the knowledge or consent of the medical officers of the institution. The consulting medical board desire to disclaim all responsibility therefor."

[Signed.]
CARL BECK, M. D.,
W. T. ALEXANDER, M. D.,
HENRY S. OPPENHEIMER, M. D.,
JAS. G. WALLACH, M. D.,
H. T. BROOKS, M. D.,
GEO. H. FOX, M. D.,
A. T. SWAN, M. D.,
WILLIAM S. GOTTHEIL, M. D.

Pyramidone, a New Antipyretic and Analgetic.—Professor Filehne, of Breslau (*Berliner klinische Wochenschrift*, November 20, 1896; *Therapeutische Wochenschrift*, December 6, 1896), describes this substance as a substitution compound of antipyrine in which an atom of hydrogen is replaced by the group $N\begin{smallmatrix}CH_3\\CH_3\end{smallmatrix}$. It is a white, crystalline, tasteless powder soluble in ten parts of water.

The effects of pyramidone on the nervous system are analogous to those of antipyrine throughout, and the mechanism of its antipyretic action is the same, that of increasing the dissipation of heat. Thorough observation, however, discloses certain differences of effect. Pyramidone acts on man in doses only a third as large as those of antipyrine; its action is manifested more gradually and subsides more slowly. Its antipyretic action is much milder and lasts longer. Animals poisoned with very large doses of pyramidone show no material alteration of the blood, either microscopically or spectroscopically, and no hæmorrhages, thromboses, or organic degenerations. In the healthy human subject, doses of eight grains produce neither subjective nor objective effects; doses of from five to eight grains were given to patients three times a day with advantage. The author has always found it promptly efficacious in relieving pain of various sorts, such as febrile headache, pain in the lymph-glands and the spleen in pseudo-leucæmia that of tuberculous peritonitis, anæmia, and multiple neuritis, and intercostal neuralgia occurring as a seque of influenza. In headaches, it is sufficient to give six grains.

In four cases of nephritis it had no effect on the symptoms, except on the headache in one case of contracted kidney. Its antipyretic action was proved in twelve cases, including those of tuberculosis, typhus scarlet fever, pseudoleucæmia, influenzal pneumonia etc. The promptness of its action as an analgetic and the mildness of its febrifuge action, the author thinks entitle it to further trials.

The International Medical Annual.—The publisher Mr. E. B. Treat, announces that the fifteenth volume for 1897, will be issued early in the year.

THE NEW YORK MEDICAL JOURNAL, JANUARY 16, 1897.

Original Communications.

ABSCESS OF THE LUNG.

OPERATION. RECOVERY.

BY W. P. NORTHRUP, M.D. (MEDICAL HISTORY),
AND A. J. McCOSH, M.D. (SURGICAL HISTORY),
PRESBYTERIAN HOSPITAL, NEW YORK.

FLORENCE A., born in England, twenty-three years of age, a waitress, entered my service at the Presbyterian Hospital with the diagnosis of fœtid bronchitis.

The patient was well nourished, of a florid complexion, not anæmic. Her cough was somewhat troublesome; sputum muco-purulent (nummular), copious, not offensive. After a few days in bed, all symptoms seemed to moderate, her temperature regularly touching 100° F. at some time of day, but mostly remaining at normal, sputum diminishing in quantity and general symptoms improving. The one thing that was pronounced was the offensive odor (putrid stink) of the breath.

The family history given by the patient was as follows: Father died of abscess of the liver; mother still lives; a sister died of abscess on the kidney; a brother of Bright's disease. Her personal history mentions a few attacks of rheumatism between the ages of fourteen and nineteen; otherwise she has been habitually in good health.

During the winter, six months before entering hospital, the patient suffered pretty severely from epidemic influenza. She had no physician; recovered in a few weeks, so far as she knows, feeling ultimately quite as well as usual. Her friends, however, think she has never been so well again, adding the further details—easily fatigued, cough, faintness, pain in the back, loss of color.

Two months and a half before entering hospital the patient had what her physician denominated pleurisy. Her symptoms she describes as "chills, pain in the right chest, headache, loss of flesh, night sweats, fever." She was better and worse till September 13, 1895, when she entered hospital and my personal observations began.

On the sixth day after entrance, after apparently doing fairly well, and possibly as a result of Carlsbad salts, the patient vomited as well as had copious passages. On this day, however, further important symptoms developed. The temperature rose to 101° F.; on the following day, to 103.5° F., with pain in the chest and increased cough. On the third day the temperature reached 104° F.

Lungs.—Physical examination of left, negative; no exaggeration of respiratory sounds, no râles. Right: behind, râles over lower two thirds, indifferent in quality, occasional; slight dullness over lower two thirds, vesicular breathing heard close under the ear, no bronchial element to voice or breathing. Nothing heard over the posterior or post-lateral aspects to give any clew to the diagnosis, certainly could not suggest a source from which such a quantity of expectoration could come. Anteriorly at apex there were exaggerated pulmonary resonance and respiratory sounds. All positive physical signs were from the third space downward; over this there was flatness, continuous with the liver to the free border of the ribs. The level of flatness gave the impression of a liver crowded up to the third space. The line of flatness was straight and sharp from the sternum to the anterior axillary line; here it became indistinct, apparently dipping deeply inward and turning downward to the liver. flatness. It was as though a quart water-bag had been shoved in from under the sternum, crowding the lung upward, backward, and toward the axillary line. Over this area there was flatness continuous, absence of all respiratory sounds, no bronchial voice, and there were no râles or friction sounds. It suggested the signs one gets where sarcoma has produced a solid tumor in the mediastinum or root of the lungs. The heart was not crowded from its normal position nor was the liver displaced downward.

The question which first presented was whether this was encapsulated empyema emptying itself through the bronchial ways or abscess in the lung. It was at first thought to be probably the former, but when it came to exploratory puncture the opinions had rather turned to the second. Incidentally the site and manner of puncture indicated the diagnosis entertained.

The patient was assisted to sit up in bed, the right forearm bent over the top of the head. A long, large-calibre exploring needle on a piston syringe was used. The needle entered at a point just posterior to the breast, about the anterior axillary line, on a level with the third space (at sternum). It was then directed, not toward the superficial flat area, but deep, directed as near as possible toward the root of the lung, and thrust in up to its limit, before drawing the piston. When the air was exhausted the barrel promptly filled with thick, stinking pus.

This did not, of course, distinguish between an encapsulated empyema lying in the position of the illustrative water-bag—that is, touching the chest wall in front and extending deep along the mediastinum and in the direction of the root. The sputum was examined repeatedly for tubercle bacilli and actinomycosis rays without success. The nature of the process was never determined by exact test.

The case was transferred to the service of Dr. McCosh with a diagnosis of deep-seated pus in the right lung, either encapsulated interlobar empyema or pulmonary abscess near the root.

SURGICAL HISTORY BY DR. MCCOSH.

On admission of the patient to the surgical division on September 26, 1895, her temperature was 104°, pulse 125, respiration 32; there was extreme dyspnœa, and the heart's action was very feeble.

Operation; Ether Anæsthesia.—Several exploratory punctures were made with a large needle below and to the outer side of the right breast, but no pus was found. An incision two inches long was then made over the sixth rib, below and just external to the right breast in the anterior axillary line. A portion of the rib an inch and a half in length was excised and an entrance thus gained into the pleural cavity, which was found free from fluid of any kind. This exposed the vault of the diaphragm, and superior to this, but not in contact with it, was felt the lung, consolidated, contracted, and occupying the upper and inner half of the right thoracic cavity. The incision was carried upward and backward along the rib into the axilla and an additional two inches of rib excised. The finger was then swept around the lung, which was seen and felt to be firmly adherent to the superior internal and anterior wall of the right chest. Except at the apex, however, there were no adhesions toward the external wall, and the contracted lung was at least two inches distant from that part of the chest wall where the incision had been made. A large exploring needle was plunged directly into the centre of the lung and at the depth of two inches pus appeared in the syringe. The needle was left *in situ*, and along it an incision was made by scissors through the consolidated lung tissue until the abscess cavity was reached, when about three ounces of thick and very fœtid pus escaped. The cavity was freely opened and the finger passed into it broke up a number of trabeculæ and pulled out a long strip of sloughing tissue with a very foul odor. A soft spot being felt in the internal wall of the abscess, the scissors, guided by the finger, was plunged into this and entered another cavity from which there was an escape of an ounce of pus of a similar character. This cavity was also freely opened, and all bands of tissue broken up by the finger. The hæmorrhage from the incisions in the lung was insignificant and needed no mechanical procedures for its arrest. The cavities were rubbed, and all loose and broken-down tissue was swabbed away with gauze sponges. No irrigation was employed; strips of iodoform gauze were packed into the cavities alongside of two soft-rubber drainage tubes. The ends of the strips and tubes were brought out through the opening in the chest wall and a copious sterile dressing applied. Severe shock followed, and for several weeks the patient remained in a very critical condition.

September 27th.—Temperature, 106°; pulse, 160; respiration, 38. Dyspnœa and weak heart action.

28th.—Temperature, 104°; pulse, 140; respiration, 50. Profuse bloody expectoration with foul odor.

29th.—Temperature, 104°; pulse, 130; respiration, 50.

30th.—Temperature, 105°; pulse, 130; respiration, 48. Distressing cough with offensive purulent expectoration. Dressing soaked with foul discharge, changed.

October 1st to 8th.—Temperature ranged between 102.5° and 103.5°; pulse, 125; respiration, 40. Distressing cough continued with bloody expectoration, the odor of which, however, was less foul. On the fifth day the tubes and gauze were removed, and after irrigation of the pleural cavity were replaced, this being repeated every second day.

9th to 25th.—Temperature ranged between 101° and 103°, with evidence of morning remission; pulse, 120; respiration, 36. Profuse hæmorrhages both from the mouth and through the wound occurred nearly every day, and the patient became very much exhausted by these and by the distressing cough which still continued. Turpentine inhalations seemed to control in a measure the hæmoptysis.

26th to November 1st.—Temperature, 101° to 103°, with distinct morning remission. Marked improvement; cough disappearing, as also the expectoration. Pulse 110 to 120, stronger. Appetite begins to return. Discharge from wound less and with but little odor. During November all the symptoms continued to improve. Gradual gain of strength. Cough disappearing, as also the expectoration, which is free from blood and odor. Temperature gradually became normal. Discharge from wound gradually diminished. By the end of the month the cavity in the lung was apparently obliterated. The patient was out of bed for the first time on the 20th of November (fifty-five days since operation).

During December the gain was very rapid. By the 20th the cough had almost disappeared, as had the expectoration. The lung was slowly expanding. The opening into the chest was completely closed. Her general condition was so good that she was allowed to return to her home in Long Island, where she continued to gain flesh and strength.

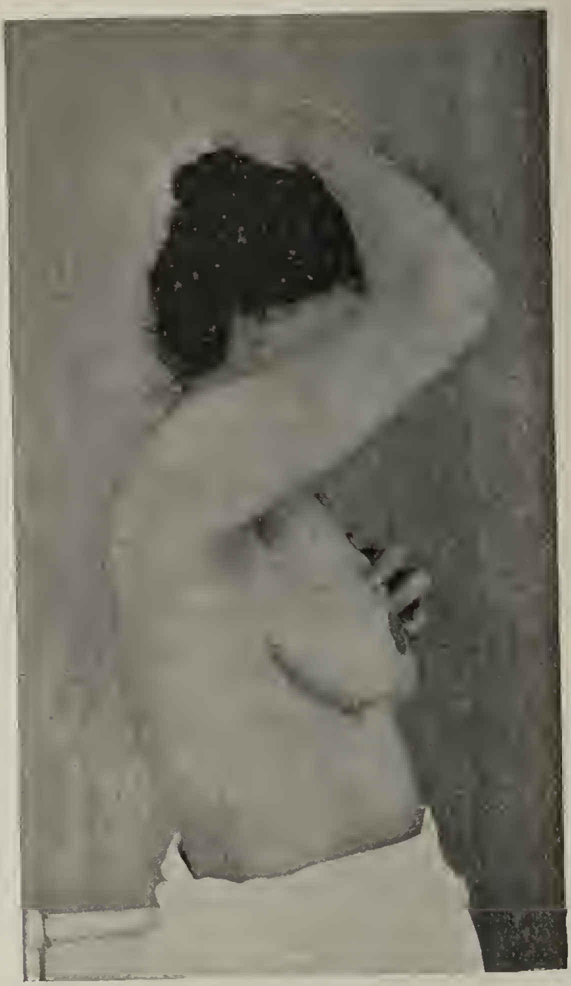


FIG. 1.—Showing the cicatrix of the operation wound along the lower margin of the breast, also the general state of good nutrition.

June 1st.—Since leaving hospital the patient has lived at Great Neck, Long Island. Steady and rapid improvement. Gain in weight, twenty-five pounds. Looks in excellent condition. No fever. No pain. Oc-

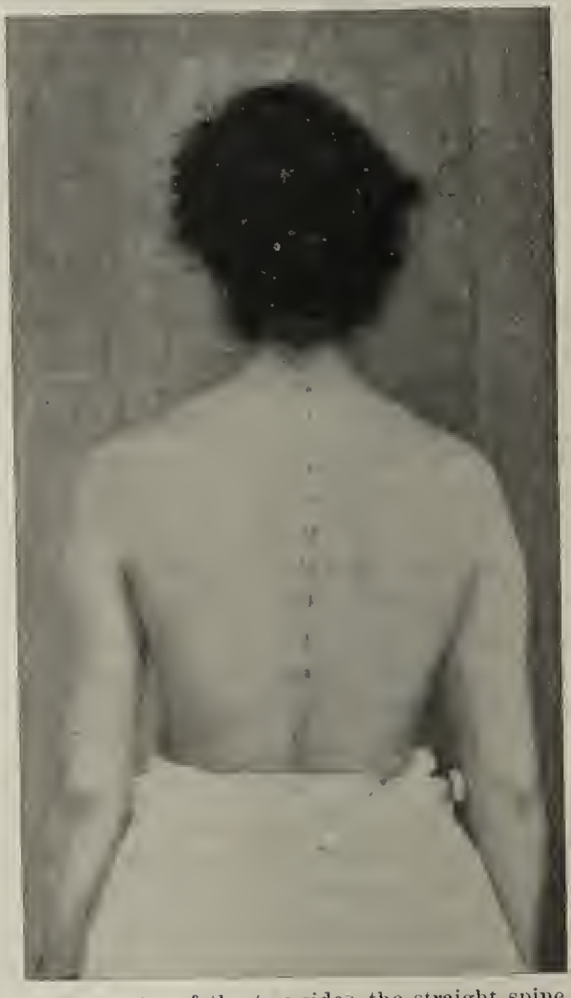


FIG. 2.—Showing symmetry of the two sides, the straight spine, absence of retractions, also the general good nutrition.

casional cough with expectoration of small quantity of clear mucus without taste or odor. On examination, right side of chest measures half an inch more than left. No retraction or tenderness of cicatrix. Lung evidently well expanded.

On deep inspiration, when almost at its maximum, a short, sharp, hacking cough was produced, as if the full expansion of the lung was checked by a pleural adhesion.

SUBSEQUENT HISTORY BY DR. NORTHRUP.

July 6th.—A little more than six months from her discharge from hospital, the patient was examined carefully in my office, then taken to the hospital, where in the presence of Dr. McCosh, Dr. James, Dr. Thornley, the house staff, and myself, the following points were confirmed:

Right shoulder possibly a little lower than the left, though so little that it might be the natural position of the individual. Possibly a little flattening under the right clavicle. Cicatrix firm, healthy, and to front view hardly to be seen, being concealed beneath the breast. Outlines of the chest and general expansion could not lead to the suspicion of any chest lesion. Measurement of the two halves gives half an inch more length of tape to the right half of the thorax (the one operated on) than to the left.

There is no curvature of the spine, no contractures; liver not drawn up. The only thing that could be said positively of the chest was that "only the physical signs of an old pleurisy" were present (James).

At this visit the accompanying photographs were taken. They were designed to show good general nutrition, the symmetry of the thorax, and the little evidence of operation.

The former patient weighs a hundred and forty-five pounds, and has been for some months able to do the work of waitress; her friends say she is able to sweep and do most kinds of work, but that she is less enduring than formerly.

SUBSEQUENT HISTORY BY DR. MCCOSH.

The patient continued in good health until July 14, 1896, when she began to complain of pain in her right side. She consulted Dr. J. B. Welwood, to whom I am indebted for the following facts: The pain increased, and two days later she began to cough, the temperature being 103°, pulse 112, respiration 30. There was dullness on percussion over the middle lobe of the right lung, in the axillary line, with bronchial breathing. Diagnosis: pneumonia. During the next ten days the fever and cough continued, expectoration increased and gradually became fœtid. The temperature ranged between 102° and 104°; pulse, 110 to 120; respiration, 28 to 36. On July 29th the expectoration suddenly became very profuse, about ten ounces of almost pure pus being coughed up within two hours. On August 3d I saw the patient with reference to an operation. There was an area of dullness and bronchial breathing beneath the old scar. Inasmuch as drainage into the bronchi seemed to be adequate, and as there was no evidence of exhaustion of the patient, it was decided to delay operation. Within the next few days there was gradual improvement in all her symptoms. After August 12th the temperature gradually fell, the expectoration becoming less purulent and less fœtid. On August 25th the fever had entirely disappeared and the cough and expectoration had almost ceased. The patient reported to me on November 15th. She was in fine health, weighed a hundred and forty pounds, and had regained her full strength. No cough, no expectoration, no pain. The lung expanded to its fullest extent, and the "catch" which had formerly prevented a full inspiration had entirely disappeared.

A CASE OF
DERMATITIS CAUSED BY THE RÖNTGEN RAYS,
WITH THE RESULTS OF
MICROSCOPIC EXAMINATION OF THE AFFECTED SKIN.

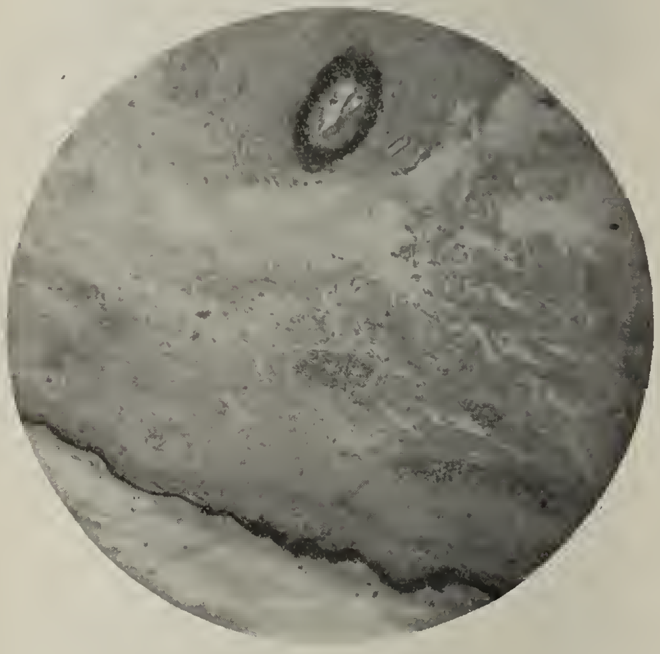
By A. B. KIBBE, M. D.,
SEATTLE, WASHINGTON.

During the first week in September I devoted considerable time to experimenting with an X-ray apparatus, endeavoring to ascertain under just what conditions of tube, coil (giving an eight-inch spark), and actuating energy, storage battery, or incandescent current with make and break connection on electric motor, I could obtain the best results. In general, the current strength used was about ten ampères.

Naturally, the most convenient manner of testing the working of the tube was by using my left hand in front of the fluoroscope, and this I did frequently; but as this method gives less sharp and well-defined pictures than by using a sensitive plate and taking radiographs, the fluoroscope was solely used to test the activity of the tube in producing the radiations, and, when the latter were satisfactory, radiographs of the hand, wrist, and arm were taken with exposures varying from thirty seconds to five minutes. Just how often the hands were exposed I am unable to say, but certainly not less than twenty times for the left with the fluoroscope, and at least five for the right, placed on the plate holder; in no instance, however, for a longer period than five minutes. The results having been satisfactory, it was my intention to obtain a series of plates showing the elbow, shoulder joint, knee, etc. With this in view, my elbow joint was placed about four inches below the tube, which was of the ordinary focus pattern, the cathode a cup-shaped aluminum disc, the anode a plate of platinum set at an angle of forty-five degrees to the long axis of the tube. The focus I endeavored to have directly over the joint. The arm was partly flexed and resting in a semiprone position on the plate holder. The result not proving to be as perfect as I had hoped, a second exposure, lasting seven minutes, was tried a day or two later, and a third, lasting ten minutes, on the evening of the following day. This last was on the 8th of September. At the time a slight tingling of the skin was noticed, so slight, however, that I was not certain that it was not due to the effects of imagination, as during the "sitting" I was going over, mentally, Tesla's arguments in favor of the assumption that the so-called rays are really due to minute particles thrown off from the cathode. In each instance the arm was covered with my usual clothing, consisting of heavy woolen underclothing, shirt and coat sleeve.

A day or two later my attention was attracted to the appearance of the dorsal surfaces of both ands by a slight sensation of irritation and itching. At first sight the appearance suggested sunburn, but, as the weather had been cloudy for a number of days, and further, as my skin has always been more than ordinarily free from any of the common affections—eczema, etc.—I half jokingly attributed it to the X rays. The day following my discovery of the condition of my hands the tube was accidentally broken, and pending the receipt of a new one the experiments were discontinued. On September 18th I felt a slight itching near the elbow of that arm, the right, which had been exposed to the rays, and on retiring that night was astonished to find an extensive discoloration of the skin, extending from a point two inches above the joint to a distance of about six inches downward toward the wrist, and including about one third the circumference of the arm. In color it was of a brownish-red, punctated at the upper and lower borders and ends and more confluent at the centre. Examination with the lens showed the punctated area to be due to an apparently greater hyperæmia around the hair follicles. No vesicles were apparent, and there appeared to be no tendency to their formation. Pressure caused the redness to disappear to a great extent, but not entirely. There was no sensitiveness, but the temperature was decidedly raised above that of the adjacent healthy skin. Traction on the hairs showed no loosening.

On September 20th, the affection showing no tendency to become worse, I exsected a piece of skin, a centimetre square, from the most deeply discolored area, without using a local anæsthetic, fearing to interfere with the structures by injecting cocaine. The piece so removed was fixed in three-per-cent. formalin, hardened in alcohol, imbedded in celloidin, and cut in the usual manner. Sections were stained in hæmatoxylin and eosin and in lithium carmin. The histological changes were as follows: The stratum corneum was apparently unchanged; stratum lucidum not clearly visible, excepting over small areas, where the underlying disturbance was seen to be slight. The outer layers of the cells composing the rete mucosum presented the most striking alterations, particularly in their nuclei. Taking the stain both with hæmatoxylin and lithium carmin very feebly, the nuclei showed in addition a peculiar granular change, which was first indicated in those retaining a more normal reaction to the stain by the formation of a fine nucleolus, which could be seen here and there in the process of division. Near the stratum granulosum the bodies of the cells were apparently becoming converted into keratohyalin as a first step to the increase in bulk, as it were, of the stratum granulosum by a development in their interior of coarse granules, staining deeply with hæmatoxylin, and also with carmin. With the former they appeared like blotches of India ink; in some places giving the impression as though the cells had been charred by heat. This was particularly the case around the hair follicles. The corium exhibited the ordinary changes found in a mild dermatitis: capillary dilatation, with collections of round cells scattered through its structure, particularly around the hair follicles. No extravasations of blood were noticed.



The entire absence of pain, in spite of the pronounced symptoms of inflammation over so wide an area, and the length of time elapsing between the last exposure and the appearance of the discoloration, are both remarkable. Were it not for the appearance of a somewhat similar affection on the back of each hand, and the cases reported by Marcuse[*] and Fuchs,[†] the connection between the exposure to the rays and the dermatitis might be doubted, but the case of the former corresponds in so many particulars with my own that I think there can be no question as to the cause.

In Fuchs's case the disease manifested itself after exposing the hand continuously for an hour to the rays from a Hittorf tube, actuated by a sixteen-centimetre spark coil carrying twenty ampères of current through its primary. The following changes were observed at the expiration of the hour, when pain necessitated the interruption of the exposure.

The skin, at a point directly opposite the cathode, was colored brown.

The hand was greatly swollen, with large folds in the skin. Examination with a magnifying glass showed fine fissures over the surface acted upon by the rays, the appearance in many respects resembling that of a frozen limb.

Fifteen minutes later vesicles formed in diverse places, some of which were of perceptible size. The contained fluid was similar to that found in burns.

In the case reported by Marcuse, no details of the strength of current or spark-length of coil are given. The tube, however, is spoken of as a Hittorf. The discoloration of the side of the face a brownish red was first noticed while looking in the glass fourteen days after the commencement of the experiments. Later an extensive and deep-seated affection was discovered on the back. Here the skin seemed to have been involved throughout its entire depth, as the corium, which was bared by extensive desquamation, showed numerous hæmorrhages and was covered by a seropurulent exudate. Owing to the entire absence of pain in the affected area the process was not discovered until desquamation and consequent exposure to friction had taken place. At the present time, October 3d, desquamation of the entire discolored area on my arm is going on, with absolutely no pain, excepting in the locality from which the skin was exsected. A slight itching is all that annoys me. Where the flakes have been detached the hairs seem to be as abundant and as firm as in the healthy skin. There appears to have been no interference with the healing process of the raw surface produced by the exsection, further than what might have been expected in removing a piece of skin over a joint where every movement would tend to delay cicatrization.

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[*] *Deutsche medicinische Wochenschrift*, No. 30, S. 481.

[†] *Idem*, No. 35, S. 569.

The deductions to be drawn from my experience, as well as from the cases mentioned, are too apparent to require mention. It is probable that individual susceptibility to the rays exists, as with all the experiments which have been made during the months since Röntgen's discovery was made public very few cases of injury following exposures have been published. Those to which I have referred are all that have come under my notice.

The histological changes appear to be simply a dermatitis, with degeneration of the cells of the rete, but, as I have before stated, the point of greatest interest is why the process should have so long a period of incubation. It would seem as though a process of retrograde metamorphosis was set up by the rays which required a number of days for its completion.

This point, in addition to being difficult of explanation, has a bearing on the question of the germicidal action of the rays, or, more correctly, possibly on the question of whether or no changes may be induced in the protoplasm of pathogenic bacteria which would ultimately lead to their death, or possibly to a modification or destruction of their power to induce disease.

The experiments of Minck * and others have demonstrated beyond a doubt that with the tubes then in use no germicidal action was manifested, but whether any change in virulence was produced is not stated. Whether any similar experiments with the latest type of tube have been made I do not know. In order to test these questions a series of experiments is now under way, the results of which I hope to publish later.

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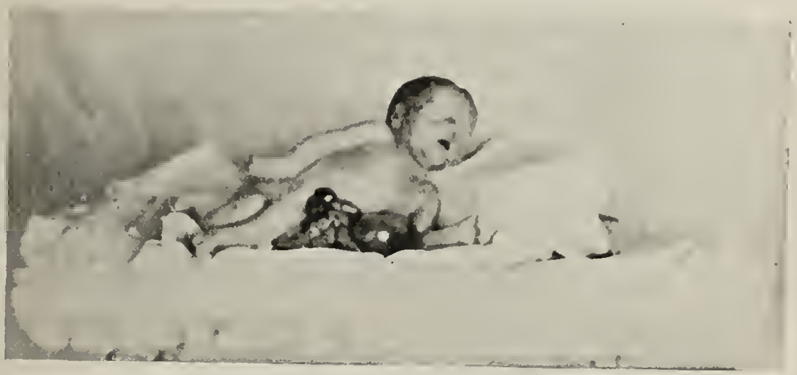
* *Münchener medicinische Wochenschrift*, 1896, p. 202.

A CASE OF ARRESTED DEVELOPMENT.

By STARR KING CHURCH, M.D.,
MARSHALL, MICH.

THE following case is reported for the purpose of ascertaining if any of your readers have met with one of the same nature:

On the morning of the 29th of September I was called to attend Mrs. B., primipara, in confinement. She had had preliminary pains for two or three days, so at this time the cervix was well dilated and labor was progressing normally with vertex presentation. Previous to the birth of the child, the patient's mother seemed quite disturbed, for she said she was sure the child would be deformed, as she (the patient) had upon two occasions during her pregnancy jumped from her carriage while the horse was running away. This I considered of no importance, and assured her that she need have no fears. However, upon the birth of the child, which was a female, there was found the following condition: Protruding from an opening about three quarters of an inch in diameter in the abdominal wall, just above the umbilicus, was the large intestine, freely exposed, and with no covering. There were the appendix vermiformis, ascending and transverse colon, part of the descending colon, and the ileum in the protrusion which hung suspended from the small opening like a tumor attached to a pedicle. The child was well developed otherwise. Efforts were made to reduce the mass of intestine, but, owing to the size of the aperture, it was impossible to do so. Under the circumstances would an operation have been advisable? The child lived thirty-six hours.



The parents objected to an autopsy, but I was permitted to take the accompanying photograph.

CHANGE OF CLIMATE
IN CHRONIC PULMONARY DISEASES.

SOME ADVANTAGES OF
THE WEST COAST OF FLORIDA.

By T. J. McGILLICUDDY, A.M., M.D.,
CONSULTING PHYSICIAN TO THE ITALIAN HOSPITAL;
FELLOW OF THE NEW YORK ACADEMY OF MEDICINE, ETC.

THERE is no doubt of the value of change of climate to a very large class of chronic invalids, and especially those with certain forms of lung disease. It is therefore dependent on the physician to be acquainted with the comparative advantages from a medical point of view of the different health resorts. From a lack of opportunities, owing to their exacting professional duties, medical men, as a rule, are prevented from forming correct opinions on the climates of various parts of the United States. False notions are, therefore, prevalent, both among physicians and patients, and sometimes grievous mistakes are made by acting on these incorrect ideas. From a somewhat extensive experience of the summer and winter health resorts of this country the writer hopes that some of the following observations on the special advantages of the west coast of Florida as a resort for patients suffering with chronic disease, especially of the pulmonary organs, may be useful in directing invalids to a place suitable for passing with pleasure and advantage the trying months of the year. In the selection of a winter residence special attention should be given to the facilities for taking daily pleasant out-of-door exercise, and the climate which gives the greatest inducements for an out-of-door life is, other things being equal, the one to be preferred. The great majority of invalids and valetudinarians feel a decided disinclination for taking the exercise which is so necessary for the improvement of their health and strength. Everything, therefore, which tends to encourage the patient to take active exercise in the open air is to be recommended, as it thus renders even a short sojourn at a health resort beneficial. I have seen sufficient results from this practice to enable me to give no uncertain opinion as to its advantages. Before definitely deciding on a winter residence particular attention should be given to the prevailing atmospheric conditions—the purity of the air; the character, direction, and force of winds; the variations of temperature, the amount of humidity and rainfall, and the number of days of sunshine. All these should be noted, as they have a great influence on the bodily health. Not less important is the geological formation, as much depends on the moisture or dryness of the soil. The good effects of a suitable climate upon the invalid are most pronounced, while, upon the other hand, a short visit to an unhealthful one may be very disastrous. It is in the temperate climates that human life reaches its longest average duration. The extremes of temperature, such as occur in both cold and tropical countries, cause a deficiency of vital energy and physical deterioration. On account of the depressing influence of our severe winter weather, whenever it is possible, both delicate and elderly persons should leave this latitude during the debilitating months of January, February, and March, for a more genial Southern region. The climate of New York and Boston, and, in fact, of the whole of the Eastern and Middle States, is too severe for invalids suffering with pulmonary disease during the winter and early spring months.

Many who greatly need the change hesitate because of the supposed considerable expense attendant upon the trip. This need not deter many, as the fares by both splendid steamers and railroad are reasonable, and a winter Southern vacation costs no more than a summer Northern one, and if the invalid wishes it can be made to cost even less. The Florida west coast is characterized by a mild, genial climate, with a tonic, bracing atmosphere, and most interesting and attractive semitropical surroundings. The vegetation is peculiarly luxuriant, and there is much natural beauty of scenery. The balmy atmosphere soothes the lungs and, as a result, there is a diminution of irritation and secretion. The continuous bright sunshine has a most wholesome influence, and when it is combined with an active outdoor life it makes the invalid, if the disease is not too far advanced, soon feel an increase in health, strength, and spirits. Elderly persons with bronchial disease will prolong their days by a short sojourn in this climate, and at the same time escape the exhausting rigors of a Northern winter. In no disease is there more marked benefit to be obtained from change of air than in chronic bronchitis. I have noted this in several severe cases. Bronchial disease is often much aggravated by sudden and great atmospheric changes.

In the uniform climate of the Tampa Bay region great benefit is to be derived from a winter residence, especially in those cases of gouty or rheumatic origin. In cases of asthma a warm and equable climate is, as a rule, beneficial. Chronic digestive derangements of a low grade, usually without any symptoms sufficiently marked to attract the attention of either the affected individual or his physician, generally precede pulmonary disease by months or even years. Here, pure drinking water and a wholesome diet, which does not overtax the powers of assimilation, along with a pleasant, moderately warm, dry atmosphere, are obtainable, and, combined with exercise, are most essential in the treatment The popular conception of the curative influence of living in this section of the country in pulmonary and other affections has been demonstrated to be correct by a number of cases which have come under my observation. Among the diseases benefited by this change of climate may be enumerated chronic bronchitis, incipient phthisis, asthma, laryngitis, disorders of digestion, and some forms of mental depression.

Beneficial results may also be expected from the free and active open-air life in this pure and genial atmosphere in the case of children predisposed by inherited weakness to lung disease.

The invalid who journeys South should studiously avoid an imitation of the diet of the average inhabitant of the Southern section of this country, otherwise serious results may follow the embarrassment of the digestive organs. In the farming sections, the frying-pan is used on all possible occasions, and fresh doughy bread, very strong tea, coffee, and sweets are staple articles of consumption. If individuals become ill in this beautiful and healthful seashore climate they have only their own ignorance of the simplest dietetic and hygienic laws to blame for it. Errors of diet are easily avoided by a little care.

In speaking of consumption and its treatment by change of climate, in the earlier stages where the cough is slight and dry, a mild yet bracing sea climate like that of the Tampa Bay region should be chosen. It will be of much benefit to the sufferer. Here the open-air life and exercise invigorate the digestion and assimilation, thus enriching the blood and eliminating the materials on which the disease depends. Where the disease is more advanced, and there is consolidation with destruction of lung tissue, it may be arrested in some cases, while in others life will be prolonged, even when we can not save it. In the last stages of consumption, where cavities have formed, with general septic infection, change of climate is not to be recommended. I have treated successfully a number of cases of pulmonary tuberculosis, in what might be termed the incipient stage, without change of climate, but it is better and much pleasanter for the patient to have neither clouded skies, east winds, nor snow and ice to encounter when taking the out-of-door and special exercise which I so strongly recommend. Curative exercise, special manual treatment, hydrotherapy, and a proper diet, along with suitable medicinal remedies, will work marvels in the early stages of this most serious disease, as I have often demonstrated, but no agent of such value as a proper climate should be neglected. Sea islands, narrow peninsulas, and locations on the seashore are suitable for the residence of consumptive patients. The salt ocean air, by its bracing quality, is, as is well known, of undoubted advantage in this disease. Many incipient cases are cured by a prolonged sea voyage, or by residence with an active life at the seashore.

In making the trip to the Florida west coast, if the patient is a good sailor, the ocean trip to Savannah is to be recommended. The steamers are magnificent and the service unexcelled. If seasickness occurs, it can be cured, or at least in the severest cases greatly mitigated, by drinking *hot,* not warm, water, or hot bouillon, two large cups at a time, every few hours, as needed. This will in most cases clear the head, settle the stomach, and stimulate the heart and circulation. I speak here now from a personal experience. The train service is excellent, with luxurious parlor and sleeping cars.

As consumption is the result of a failure of nutrition, the journey is beneficial by acting as a stimulus to the digestive functions, enlivening the mind and nervous system by change of scene and surroundings. A marked improvement is often soon manifest as a result of the traveling and the interest awakened by new objects and new ideas. There is also great benefit, both mental and physical, to be derived from the general change in the mode of living from an impure city atmosphere with conventional surroundings to a wholesome, unrestrained country life. The change of temperature alone is not sufficient to account for it. The cold, wet days of our Northern winter climate are most depressing to the pulmonary patient and often prove very irritating to sensitive lungs. Even in the warm and genial climate of this Southern country the invalid should remember that there are at times a few cool days when comfortable fall or winter clothing is desirable. He should not dress too lightly, but should follow in this matter the habits of the permanent residents. Flannels should always be worn next the skin as a safe and necessary precaution against any lowering of the temperature.

The climate of the west coast of Florida, in the Tampa Bay region, is warm, dry, and equable. This section is easily and quickly reached by land or water, and the journey is neither difficult, fatiguing, nor very expensive. It can be made extremely pleasurable. The hotels and boarding houses afford every comfort and convenience at reasonable rates, Mr. Plant's Tampa Bay Hotel being one of the finest in the world. The food is of the best quality, the meat coming from Chicago and the West, and it is digestible and nutritious; while fresh vegetables and fruits can be had almost every day in the year. The best time to leave for a trip to Florida is about the beginning or middle of January, and the invalid should not return until late in the spring, as the change from a warm Southern atmosphere to our cold March wind may be dangerous. The later part of April or the 1st of May is early enough to return.

Through the kindness of Willis L. Moore, Esq., chief of the Weather Bureau at Washington, D. C., I am enabled to present a table of monthly and annual meteorological summaries for Tampa for 1895.

REPORT OF THE CHIEF OF THE WEATHER BUREAU.

Monthly and Annual Meteorological Summaries for Weather Bureau Stations.

Pressure.—The monthly means and extremes of pressure have been reduced to 32° Fahrenheit, and corrected for instrumental error when the value of the latter correction is more than ± ·006 of an inch.

Temperature.—The monthly means have been obtained by the formula $\frac{\text{max.} + \text{min.}}{2}$. The extremes are for the civil day, midnight to midnight.

Moisture.—The monthly mean vapor pressure has been obtained directly from the monthly mean temperature of the dew point. The relative humidity and the dew point have been obtained from the individual values for 8 A. M. and 8 P. M.

The maximum precipitation in twenty-four hours is for any period of twenty-four hours. The daylight cloudiness is the average of a number of personal estimates made during the day.

Wind.—The average hourly velocity is the total wind travel divided by the number of hours in the month. Maximum velocities are for a five-minute period. A wind velocity of forty miles per hour is considered as a gale.

The word "Calm" appears in the column headed "Prevailing direction" whenever the number of "Calms" observed has been greater than any direction.

Number of days.—The designation of a day with no clouds or less than three tenths cloudiness has been changed from "Cloudless," heretofore used, to "Clear."

Time.—Eastern time (seventy-fifth meridian) is the standard used in all of the observation and map work of the Weather Bureau.

References and abbreviations.—H = Height of barometer cistern above mean sea level; $h_{t.}$ = height of thermometer above ground; $h_{r.}$ = height of rain-gauge above ground; $h_{a.}$ = height of anemometer above ground.

Annual Meteorological Summary for the Year ending December 31, 1895.

TAMPA, FLA. [λ = 27° 57′ N.; φ = 82° 27′ W.; gravity corr., — 0·04.]

Month.	Pressure.			Temperature.							Moisture.										
		Extremes.		Mean.					Extremes.		Dew point.		Relative humidity.		Vapor pressure.		Precipitation.		Cloudiness.		
	Monthly mean	Maximum.	Minimum.	8 A. M.	8 P. M.	Maximum.	Minimum.	Monthly.	Maximum.	Minimum.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	Total.	Maximum in 24 hours.	8 A. M.	8 P. M.	Daylight.
	In.	In.	In.	°	°	°	°	°	°	°	°	°	%	%	In.	In.	In.	In.			
January	30·09	30·32	29·83	55·6	60·9	69·7	52·0	60·8	79	31	52	55	90	82	·420	·460	3·40	1·32	4·6	3·6	5·3
February	30·13	30·41	29·68	49·3	54·2	63·2	45·6	54·4	77	22	45	47	86	76	·325	·335	3·99	2·26	5·5	4·0	5·2
March	30·10	30·36	29·78	61·4	66·7	75·6	57·2	66·4	82	40	58	59	88	77	·489	·518	2·08	1·10	5·7	3·5	4·9
April	30·01	30·26	29·66	66·4	69·0	77·9	60·6	69·2	86	50	60	60	80	74	·527	·537	5·38	2·70	4·5	3·6	4·9
May	30·03	30·17	29·85	75·5	76·4	86·3	68·0	77·2	92	58	69	68	81	76	·720	·696	1·29	0·63	3·9	4·4	4·9
June	30·06	30·23	29·92	78·5	79·2	88·6	71·4	80·0	94	64	71	72	79	78	·766	·777	4·24	1·48	5·0	5·9	5·0
July	30·07	30·19	29·90	80·5	79·0	88·5	73·5	81·0	93	69	73	74	79	84	·822	·831	10·63	1·87	4·9	6·8	5·9
August	30·01	30·15	29·90	80·5	79·6	89·4	74·0	81·7	95	68	74	73	81	81	·836	·817	8·88	2·49	4·9	7·6	7·4
September	30·00	30·16	29·80	77·6	78·7	88·3	72·0	80·2	91	66	72	71	83	79	·784	·767	4·80	1·40	4·1	4·7	4·6
October	29·99	30·20	29·77	70·0	73·7	82·2	65·1	73·6	88	59	63	64	79	72	·581	·596	3·04	2·78	4·2	3·2	4·7
November	30·09	30·31	29·84	62·3	66·2	75·8	58·2	67·0	84	42	58	58	85	77	·504	·508	1·78	0·91	4·6	3·7	4·6
December	30·13	30·38	29·83	53·7	58·4	67·9	50·4	59·2	80	32	48	48	83	69	·363	·354	1·14	0·36	4·7	3·7	4·8
Year	30·06	30·41	29·66	67·6	70·2	79·4	62·3	70·9	95	22	62	62	83	77	·595	·600	50·64	2·78	4·7	4·6	5·2

TAMPA, FLA. [H = 36 ft.; $h_{t.}$ = 60 ft.; $h_{r.}$ = 52 ft.; $h_{a.}$ = 68 ft.]

Month.	Wind.														Number of days.													
	By self-registers.					Number of winds, 8 A. M. and 8 P. M.												Precipitation.					Maximum temperature.			Electricity.	
	Average hourly velocity.	Prevailing direction.*	Maximum velocity.	Direction at time of maximum velocity.	Number of days with gales.	North.	Northeast.	East.	Southeast.	South.	Southwest.	West.	Northwest.	Calm.	Clear.	Partly cloudy.	Cloudy.	0·01 inch and over.	0·04 inch and over.	Snow.	Hail.	Fog.	Below 32°.	Above 90°.	Minimum temperature below 32°.	Thunderstorms.	Auroras.
	Miles.		Miles.																								
January	6·5	N.	24	S.	0	15	9	5	7	6	11	4	5	0	7	17	7	9	8	0	0	0	0	0	1	1	0
February	7·3	NE.	30	W.	0	13	13	5	2	2	4	7	9	1	10	11	7	6	6	0	0	0	0	0	3	0	0
March	7·5	NE.	29	SW.	0	8	13	4	3	8	11	7	8	0	11	14	6	6	3	0	0	0	0	0	0	2	0
April	7·7	W	42	SW.	1	5	11	3	9	4	6	16	6	0	10	12	8	8	8	0	0	0	0	0	0	4	0
May	6·0	NE.	23	S.	0	4	17	8	12	2	5	9	5	0	9	19	3	8	6	0	0	0	0	3	0	5	0
June	5·4	NE.	21	SE.	0	4	16	10	3	1	3	13	10	0	7	18	5	11	11	0	0	0	0	9	0	4	0
July	5·4	W.	24	SE.	0	1	6	8	10	3	11	15	8	0	5	17	9	20	18	0	0	0	0	11	0	9	0
August	5·0	E.	26	SE.	0	2	7	19	9	11	2	10	2	0	1	13	17	7	14	0	0	1	0	13	0	15	0
September	5·5	NE.	22	NE.	0	9	28	8	5	1	4	5	0	0	9	19	2	13	8	0	0	0	0	9	0	3	0
October	7·1	N.	25	NE.	0	31	13	4	4	1	2	3	3	1	11	18	2	5	4	0	0	1	0	0	0	0	0
November	6·3	N.	23	NW.	0	32	11	1	1	1	1	4	8	1	10	16	4	10	7	0	0	1	0	0	0	0	0
December	6·6	N.	26	NW.	0	20	16	3	4	3	0	3	13	0	13	12	6	9	4	0	0	1	0	0	0	0	0
Year	6·4	NE.	42	SW.	1	144	160	78	69	43	60	96	77	3	103	186	76	122	97	0	0	4	0	45	4	43	0

* By eye observations at 8 A. M. and 8 P. M. when there is no self-register at the station.

A PRELIMINARY NOTE
ON A NEW METHOD OF DILATING STRICTURES OF THE EUSTACHIAN TUBE BY MEANS OF THE GALVANIC CURRENT.

By ARTHUR B. DUEL, M. D.,
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It is a well-known fact among otologists that in a large percentage of cases of chronic catarrhal otitis media and tubal catarrh of long standing one of the chief causes of impairment of hearing and tinnitus aurium is the narrowing of the lumen of the Eustachian tube by hypertrophy of the submucous tissues surrounding it, thereby preventing the maintenance of the normal air pressure behind the tympanic membrane. In cases where the tube is still sufficiently patent to allow the passage of air and medicated vapors into the tympanum, by means of the Eustachian catheter, improvement almost invariably follows.

Quite a large number of cases, however, are encountered where there is such a marked narrowing of the tube that attempts at inflation with the catheter fail to give any relief. Improvement is obtained in these cases only after the constrictions have been overcome. A few years ago Dr. Dench devised for this purpose a specially constructed catheter, with a series of German-silver bougies, ranging from two thirds of a millimetre to two millimetres in diameter. Of late he more frequently uses an ordinary silver catheter, through which a No. 5 piano wire is carried. A pledget of cotton of the desired size is twisted tightly about the tip, which is bent back at a sharp angle to prevent the cotton from slipping. The other end is bent at a right angle, about an inch and a half from the funnel-shaped end of the catheter, in order that the distance which the bougie has entered the tube may be estimated.

This method has proved more satisfactory than the use of metal bougies, from the fact that the cotton pledget has a tendency to expand when moistened, and this exerts pressure on the contracted canal. At the same time, when so desired, by means of the cotton, astringents can be applied directly to the walls of the tube.

It has been positively demonstrated by electro-therapeutics that the negative pole of the galvanic current retards the excitability and growth of tissue and causes exudates to be reabsorbed. While examples of the truth of this principle have been shown in the cure of a large variety of diseases, none have been more striking than the rapid cure of stricture of the urethra. It occurred to me after studying a number of cases that, with a properly constructed apparatus, the strictures of the Eustachian tube, under consideration, might in a like manner be much more rapidly and satisfactorily dilated, and, at the same time, with better hope of permanent results.

Weber-Liel, of Germany, and Dr. Dean, of Scranton, Pennsylvania, have made use of electricity in the Eustachian tube, but, so far as I know, no one up to the present time has used the negative pole for the purpose of rapidly dilating strictures in this location.

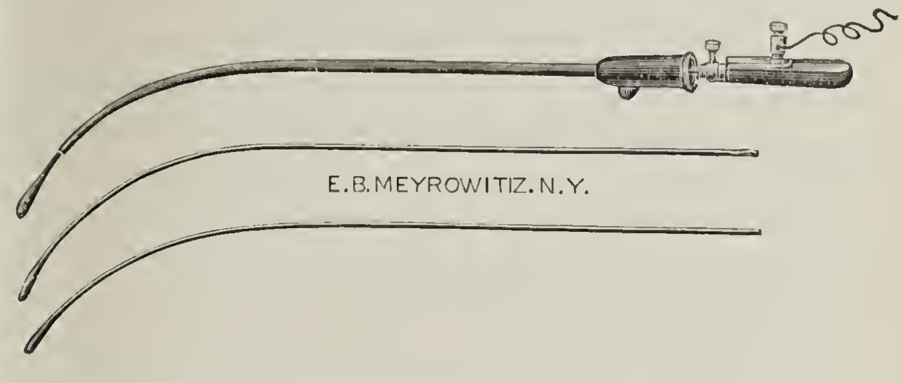
Through the kindness of Dr. Dench, I have used the method on several patients in his clinic at the New York Eye and Ear Infirmary during the past ten weeks.

For the purpose of conducting the current I have had four copper bougies, varying from No. 3 to No. 6 (French scale), securely mounted on No. 5 piano wire. These are passed through small, insulated, pure silver catheters and drawn back until the bulging portion of the bougie fits tightly in the mouth of the catheter.

(The catheters are insulated by drawing their rubber tubing over them or by winding with silk and afterward coating them with shellac. Hard-rubber catheters were used at first, but they are not so readily bent to fit different patients and are not stiff enough.)

The other end of the wire is fastened an inch and a half from the funnel-shaped end of the catheter to the handle which connects it with the negative pole of the battery. The indifferent or positive pole is connected with the hand of the patient by means of an ordinary contact electrode. It is absolutely essential that the battery with which the current is applied should be supplied with a perfect rheostat and milliampèremeter.

The bougie is passed through the tube in the usual manner, the tip being pushed forward until it is felt to be obstructed by the constriction. The current is then slowly turned on until from two to five milliampères are used. It is never necessary to use more than this, and probably the best results are obtained by a longer contact with a small ampèrage than *vice versa*.



After a contact of from two to five minutes the bougie is felt to pass on through the softened stricture with a slight pressure. In some instances the bougie encounters more than one constriction before it passes into the tympanum.

The bougie is then slowly withdrawn through the constriction, and the current gradually turned off before the catheter is removed. The current should never be opened or closed suddenly.

In the cases which have been thus far dilated by this method the results have been most flattering and seem to indicate that it will be of considerable value in the treatment of stenosis of the Eustachian tubes. In addition to this I am convinced that the negative pole carried in this manner directly into the tympanum will, by its electrolytic action, bring about the resorption of hypertrophic deposits in many instances, and, consequently, relieve the distressing symptoms of which they are the cause.

A detailed report of several cases now under treatment will be given later on.

My thanks are due to Mr. E. B. Meyrowitz for the construction of the apparatus and the cuts.

317 Second Avenue.

THE LOCAL TREATMENT OF ABSCESSES AND PHLEGMONOUS CONDITIONS.*

By JAMES STUART, M. D.,
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Presenting nothing essentially new in therapeutics, but simply clothing old ideas in new language, I beg your attention while I express my views as to the best way of dealing with abscesses and phlegmonous conditions, based mainly upon work done in the Emergency Hospital of this city.

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* Read before the Medical Society of the District of Columbia, November 18, 1896.

The frequency with which these cases are so easily disposed of, and consequently so sadly neglected by the profession at large, is my reason for endeavoring to bring about a keener and deeper interest in these conditions, with the hope that we may do more uniform and better work. The old truism, "An ounce of prevention is worth a pound of cure," holds good in these diseases. What surgeon does not recognize the verity of the aphorism that, pus having once formed, the quicker vent is given to that pus by the knife, the less damage accrues to the tissues involved, and therefore to the patient, provided more damage will not be done in reaching that pus than the pus itself will cause? This aphorism must be accentuated when we come to deal with suppuration occurring beneath any of the denser tissues of the anatomy, where the well-known law of pus advancing along the route of least resistance, in opposition to the law of gravity, holds sway, and tension being at a maximum, rapid necrosis of tissue and burrowing of pus ensue; some of the commoner examples of which are palmar, axillary, mammary, and ischio-rectal abscesses.

All surgeons are pretty well agreed as to the general constitutional treatment to be pursued, which consists in keeping the bowels lax, and putting the patient on a nutritious and, if need be, a stimulating diet. Of local remedies advised to prevent the formation of abscesses, phlegmons, etc.—that is, remedies applicable to the first stages of inflammation—*rest* is above all imperative. Elevation of the part is also useful by lessening congestion and pain. Ice or cold in its various forms is good for the first twenty-four hours, but if continued longer it does harm; for at the same time that it contracts the small vessels and inhibits the multiplication of micro-organisms, it diminishes collateral circulation and damages the tissues proper. Lead-and-opium wash, hot or iced, applied on gauze and kept well covered with oiled silk, is very soothing and excellent treatment. Heat, in the form of hot boric-acid fomentations, is best; by that I mean pads of gauze wrung out of hot boric-acid solution (an ounce to a quart of water), applied as hot as the patient can bear them, and these being well covered with oiled silk to keep in the heat and moisture. These fomentations must be frequently renewed, so as to keep them always hot. The last-mentioned treatment is, I think, *par excellence* the treatment, and wherever applicable, as with the hands or feet, the inflamed part should preferably be submerged every hour for a period of five to ten minutes in the hot boric solution itself. This treatment can be kept up continuously, no harm ensuing, which is not true of cold applications, which are injurious after the first twenty-four hours. Moist heat is generally credited with hastening suppuration, but when applied as hot as can be borne, and kept up, it will not only relieve the pain, but it will abort the inflammation if anything will. It acts by constricting the arteries, lessening the congestion and exudation, and at the same time it favors collateral circulation, and promotes rapid absorption of inflammatory products.

This treatment, when properly carried out in dangerous phlegmonous inflammations, preceded by early multiple incisions into the part, will bring about resolution when no other method will. I find moist heat the most efficient remedy, provided it is applied hot enough. By incising, we relieve the pain and diminish the tension, which is operative in producing suppuration, both by cutting off the blood supply and by devitalizing the resisting phagocytes and tissue cells; thus we see incising allows the cells and tissues a chance to regain their original activity, giving both vent and access to the inflammatory products. Although pus does undoubtedly form and become absorbed in a few rare instances, as in hypopyon, still it is clinically a curiosity. Incisions should be free enough to thoroughly evacuate all pus, and to be easily kept open by a drainage tube or by packing with wet antiseptic gauze; more especially should this be so when made through dense fasciæ, for the natural tendency is for them to close up and pen in the pus. All incisions made should be kept open, as a rule, by wet antiseptic gauze (I prefer bichloride), and in all severe inflammations hot boric fomentations must be applied and kept up continuously. Abscesses after incision must be irrigated and dressed daily. Before incising an abscess, the skin over and around it must first be rendered sterile—that means shaved, scrubbed with green soap, ether, or alcohol, and a 1-to-1,000 bichloride solution; and it is often best to have your diagnosis verified by aspiration. A four-per-cent. solution of cocaine, in combination with an Esmarch's bandage, is the safest and most available anæsthetic in cases where the surface to be operated upon is not great and you do not expect to gouge around with a curette after incision.

Abscesses, as a rule, are opened at the most dependent part, where drainage is best, and often counter-openings are necessary. All important structures must be carefully avoided in making the incisions, and the anatomy of the part must first be considered, the vessels and nerves being located. When abscesses are near important organs or structures, as deep-seated abscesses of the neck, abscesses of bones, near joints, etc., procrastination is extremely hazardous. Hilton's method must be closely followed in all dangerous regions. Hilton's method is to cut through the superficial and deep fasciæ and then work a grooved director carefully down into the abscess, when pus will well up along the groove. Next pass a long forceps, with the blades closed, along the groove of the director as a guide, into the abscess cavity, open the blades and slowly withdraw, thus stretching the opening already made. Abscesses which are deep-seated, beneath dense fasciæ and muscles, must be drained by large rubber drainage tubes, and must be irrigated frequently. The best way I know of to abort a boil is to incise freely, dress antiseptically, and apply hot fomentations. Whitlows and bone felons can be rapidly cured by incising, packing the incision with wet antiseptic gauze, and soaking the finger every hour for five minutes in hot boric-acid solution. It is rare to see pus form if this treatment is resorted to early enough. If pus has formed, this is still the proper treatment, plus thorough evacuation and flushing. The incision made in true bone felons must of necessity be carried through the periosteum. When necrosis of a phalanx has occurred, amputation should be avoided, since a good result can often be obtained by simply removing the sequestrum, the periosteum left behind reproducing bone. Tendons and tendon sheaths are to be avoided unless the pus happens to be in the tendon sheath itself, when the sheath should be forthwith incised, or sloughing of the tendon will result. There is always great danger of the infection spreading up into the palm and forearm along the tendon sheaths, but more especially if they are unnecessarily damaged by incision. Hot fomentations must be freely used to prevent such an accident, and if it has occurred they should be kept up to limit its upward extension. When pus has formed along a tendon sheath, a grooved director should follow up the pus tract, counter-openings being made down upon its point until the whole tract has been ferreted out; then it should be thoroughly irrigated and drained with wet antiseptic gauze or rubber drainage-tubes, to be followed by hot boric or carbolic fomentations, with frequent irrigations. A one-per-cent. solution of the acetate of aluminum is highly recommended by Nicholas Senn and others in such cases as a non-toxic and efficient antiseptic.

The general way in which dry iodoform gauze is packed indiscriminately into and around every abscess cavity or suppurating wound is irrational. Dry iodoform gauze does not drain pus, it only drains serum, being hæmostatic and checking oozing; again, it invariably sticks to and imbeds itself into the edges of the wound, penning up the pus and acting just like the stopper to a bottle, while the pus keeps on accumulating. If used in pus cases it should first be soaked in a bichloride solution and kept moist by wet dressings, fomentations, or by soaking the part in hot boric solutions. Dry dressings are only applicable to clean cases, the only exception being where a septic wound has been rendered absolutely aseptic.

All suppurations should be treated with wet dressings, either with or without oiled silk to keep in the moisture, and in most cases moist heat is an invaluable adjunct to rapid cure and resolution. Loose packing with wet antiseptic gauze, or a drainage-tube in combination with wet gauze, should be used in all pus cases. Multiple incisions, as a rule, should be made in all severe spreading inflammations. A pretty free incision must be made into inflammations occurring beneath dense fasciæ, such as those of the palm and ischiorectal fossa. The opening made should be packed and kept open with wet bichloride gauze to be followed by hot boric-acid fomentations, which will, in the majority of cases, prevent suppuration; but even if pus has formed, this is the proper treatment after thorough evacuation. One of the many recent advances in surgery, both from an æsthetic and practical standpoint, is the "Otis method," which, if generally adopted, would lessen the many unsightly scars we now so commonly see around us. Otis's method of treating buboes which have suppurated, after Lister's method of dealing with chronic abscesses, is an excellent and simple way of treating all circumscribed pus cavities, when the pus is fluid, being applicable to abscesses elsewhere than in the groin, and being destined to a great future. I use and heartily indorse this method in all circumscribed abscesses about the face, and in all suppurating glands of the neck, when the pus is sufficiently fluid and the glands can not be dissected out in their entirety. Most suppurating glands, and, in fact, any circumscribed fluid abscess, can be thus successfully cured with practically no scarring; therefore this method should invariably be chosen in locations where scarring is to be avoided or where a large incision would be dangerous. Otis first renders the part aseptic; then he makes a small incision into the pus cavity, just large enough to insert the nozzle of a small glass syringe; after gently squeezing out some of the pus he flushes out the remainder by repeated injections of a 1-to-1,000 bichloride solution, until the cavity is clean; he then injects warm sterilized iodoform vaseline (ten per cent.) into the cavity, using a small glass syringe. This syringe is now quickly withdrawn, and a cold wet antiseptic dressing—bichloride, for instance—is immediately applied, which solidifies the vaseline and prevents its escape from the cavity. The ointment should fill, but not distend, the cavity. I think curetting the cavity first, except in dangerous regions, a decided adjunct to this treatment in certain cases, and I find hydrogen peroxide a valuable agent to use prior to the bichloride irrigation. The wet bichloride dressing used should be renewed every other day, and it is seldom necessary to reinject the cavity, one injection effecting a cure at the end of one week and sometimes even quicker. It is marvelous with what rapidity healthy granulations form and completely fill the cavity. A thin, serouslike discharge is seen on removing the dressing, being, no doubt, a modified pus. The iodoform-vaseline not absorbed gradually oozes out into the dressings. The opening should not be sealed up, and dry iodoform gauze or other dry dressing must not be used, but a cold wet absorbent dressing should be applied.

Tuberculous abscesses are best treated by excision of the whole tuberculous mass, if it is possible, and it can be done in many instances, especially where glands are involved. In tuberculous abscesses connected with bone, however, it is rare that the focus can be reached and all the tuberculous tissue removed. In such cases I think that aspiration with iodoformization should be given a fair trial, on account of its simplicity and freedom from danger. The strength of the iodoform-glycerin used should vary in accordance with the size of the cavity to be injected, since too much iodoform must not be injected at one time. When repeated aspirations in conjunction with antiseptic irrigation and iodoformization fail to cure, and the focus can be reached and removed, Barker's method of small incision with thorough curettage of all tuberculous tissue with a sharp gouge, or a freer incision with a similar removal of the tuberculous tissue, followed by iodoformization and suturing of the incision, appears to my mind safer than incision, curettage, and packing the cavity with iodoform gauze. The great danger is secondary infection and sepsis. All tuberculous tissue must be removed or reinfection may occur; or, again, the wall of granulation tissue having been removed, acute miliary tuberculosis may follow. Retropharyngeal abscesses which are tuberculous should always be opened behind the sterno-cleido-mastoid muscle after Hilton's method. Since we know that many abscesses of the liver have been cured by aspiration with antiseptic irrigation, we ought to get good results in deep-seated abscesses of the liver treated by this method plus iodoformization. The Otis method would answer well when the abscess is near the surface and only a small incision can be safely made; but when a generous incision can be easily made, it may perhaps be better that the cavity be drained after incision with a large drainage-tube plus wet bichloride gauze, or that the whole cavity be packed with wet bichloride gauze. Lymphangeitis following a poisoned or septic wound should be summarily dealt with, the old wound, if visible, having been first opened up and thoroughly cleansed; then a five-per-cent. carbolic-acid dressing should be applied over the whole inflamed surface, this being well covered in with oiled silk, glazed cotton, and a bandage. Hot carbolic-acid fomentations are even more effective, and where the leg or forearm is involved it should be submerged in hot five-per-cent. carbolic-acid solution every hour for a period of five minutes.

The progress of the inflammation should be zealously watched, and, if it does not show early signs of abating, multiple incision should be made and a half-per cent. carbolic-acid solution substituted for the five per cent., or a non-toxic boric-acid solution used. Mild cases of cellulitis, and phlegmonous conditions with no special involvement of the lymphatics or tendency to spread, should be kept enveloped in hot wet boric- or carbolic-acid dressings, or submerged in hot boric- or carbolic-acid solution every hour for five minutes; but when they are severe and spreading, there is little chance of resolution occurring unless we resort to small multiple incisions, followed by hot boric-acid fomentations or by soaking the part itself in hot boric-acid solution. The cases requiring immediate incision, and those in which temporizing is justifiable, can only be learned by experience; but with early incisions resolution is pretty generally the rule, while, if you delay, much unnecessary sloughing will result, or the infection may gain too much headway and death ensue. The peculiarity of these infectious inflammations is that they kill before suppuration occurs; therefore, in all cases showing a marked tendency to spread, incision should forthwith be made to relieve tension, to let out inflammatory products, and to allow the boric- or carbolic-acid lotion ready access to the tissues. Carbolic-acid poisoning may occur when we are applying this very effective local remedy, and it must not be forgotten that the acid is absorbed through the unbroken skin. In phlegmonous inflammation of marked degree larger multiple incisions are the rule. In suppurating cases, after multiple incisions and thorough evacuation of the pus, continuous hot fomentations with frequent flushings out of the pus is the best treatment, but even this often fails and amputation becomes necessary. A timely use of the knife, with cleanliness and antisepsis, is essential in the treatment of pus cases, and wet antiseptic dressings are a great advance over dry dressings. In the treatment of pus cases, dry dressings as well as dirty poultices, still too commonly in use, should be relegated to a well-merited disuse. I find pure carbolic acid a fine agent to mop out old dirty, suppurating sinuses and to stimulate unhealthy suppurating tissues into healthful activity.

1226 FOURTEENTH STREET, N. W.

GENERAL CONSIDERATIONS ON THE TREATMENT AND MANAGEMENT OF OPHTHALMIA NEONATORUM.

By WILL WALTER, M. D.,

CHICAGO.

I TAKE it, pardon should be asked for my presenting the subject of ophthalmia neonatorum, upon which so much has been written, and with which so much has been practically accomplished in recent years.

Though not wishing to burden with reviews of past work, the beneficent influences of the instillation of nitrate of silver and stimulating antiseptics, cleanliness, and all such prophylactic procedures which have had their full and oft-repeated consideration, demand our frequent review lest, unmindful through years of fortunate escape from encounter, some one may be inopportunely remiss and much suffering, possibly interminable deprivation of a useful, almost essential, sense function result.

However, it is my purpose merely to generalize briefly and to call attention finally to one or two additions to the usual treatment which have been found markedly beneficial, and within measure we refer to the even more serious ophthalmia purulenta in the adult in the consideration at hand. And it is the hope that general practitioners, who have not on call a skilled oculist, may find some of the general points in treatment of value in managing their cases.

To bring out the desired view of the subject, the following assertions are made:

First. We are accustomed to look upon ophthalmia neonatorum as present only when the symptoms are intense, and to overlook the possibility that minor affections may be of like ætiologic kind.

Second. Unmindful of these modifications, accoucheurs omit the post-parturition prophylaxis which should be usual where there is the slightest discharge from the canal. Further than this, obstetricians should be less prone to delay the prophylactic treatment till after the opportunity has arisen for the implantation of the germs upon the sensitive and receptive conjunctiva.

Third. Usually, may I say, as ophthalmologists we are localists rather than true specialists, and unweary of the general treatment of our little patients.

A glimpse of the future of the proved germ theory of disease seems now at hand, and, grantedly infectious in its nature, this disease is governed by the same general laws as have been found to control other infections. And our three considerations are influenced by the laws governing the degrees of susceptibility to the infection on the one hand, and those determining the infecting qualities of the micro-organisms on the other.

As to the first consideration, during the past four years it has been my duty to treat many cases of a mild ophthalmia, varying from a morning agglutination with a mucoid material mixed with fibrin and epithelium to a distinct muco-purulent discharge accompanied by injection of the tarsal and bulbar conjunctivæ, nearly all presenting follicular enlargement ranging from pin-point elevations to trachomatous prominences, the degree of enlargement depending, it has seemed to me, largely upon the duration, less upon the intensity of the process, the degree of injection depending more upon the intensity.

These suggest the inquiry as to the nature of the ætiologic factors, and leave us in doubt as to whether the variations are due to alterations in susceptibility or in degrees of attenuation of the toxine; for the cases in question are such as had undoubted origin in the maternal vagina with a history of concomitant leucorrhœa.

In one case of muco-purulent discharge of moderate degree, not exciting evident pain, I was able to demonstrate a diplococcus having all the physical characteristics of the gonococcus.

Fuchs, Professor Norris, Dr. Wallace, and others have maintained, with apparently good reasoning and demonstration, that trachoma may be the result of the gonococcus, and we are led to conclude that, whereas a virulent form may cause an intense purulent ophthalmia, a less active form may cause a trachoma, perhaps, may we say, a follicular form be the resultant of an extremely vitiated and weakened colony. *Pari passu*, given an attenuated virus and varying degrees of immunity, it is capable of demonstration that relatively like degrees of ophthalmia may result depending upon the individual resistance. So, if we admit only the diplococcus of gonorrhœa into the ætiological consideration, it would seem we may have any degree of ophthalmia from the relations of the acting and the acted upon.

I am convinced, too, that many of these cases of mild catarrh, especially those which present discharge only after prolonged closure of the eyes, as in sleep, escape observation or excite no therapeutic attention, and come to us in the patient's childhood or youth as well-marked but low-grade follicular conjunctivitis of a kind difficult to permanently relieve, and many such we find whose first effect from eye strain is a foreign-body sensation and a follicular catarrh.

We speak, then, for a broader class of cases than usually called out under the title, and feel justified in calling upon accoucheurs for more frequent application of prophylactic measures, not only subsequent but precedent to parturition. Indeed, in view of the fact that the most potent factor in the production of ophthalmia neonatorum is the gonococcus, whose vitality is often modified in gleet, and which time and science have proved to lurk in urethral abrasions, within or behind strictures, or elsewhere within the genito-urinary tract of him who has once had gonorrhœa, we need always look back of the mother of the child for a possible *prima causa*, and we shall often earn the praise of a grateful husband for removing not only a menace to the vision of an offspring, but to the physical well-being of the future wife and mother. Not that I would make out that this ophthalmia, likewise an infective leucorrhœal discharge, has one only ætiological factor, and that gonorrhœa, near or remote, but that aside from the introduction of infective micro-organisms, of whatever kind, by the hands, the douche, or other means from without, our greatest attention must be to insure first against the introduction of this specific infection through coition.

Regardless of the station of life of the patient, the duty is clear: inquiry or examination should invariably be made to ascertain the exact condition. If vaginal discharge is present, treatment should be instituted early to relieve it; then, even granting the absence of germs at the time of delivery or possible infection, the Credé method is positively harmless, takes but a moment, and should be used. So many cases of the modifications or mild infections have occurred in my experience, and leucorrhœa is so common among women, that it would seem as though the treatment might well be inaugurated into an habitual one. The principal drawback to such a customary use has always been the unstable and cumbersome aqueous solutions. Wood's discs of nitrate of silver, one two hundred and fiftieth of a grain each, prepared by Wyeth & Brother, are stable, compact, and easily applied.

Lastly, the disease established in its intense form and momentarily overshadowing the integrity of the cornea and vision, we are brought to the accumulating evidence that quite as many eyes are lost because of the lowered physical vitality of the patients and lack of attention to rational methods of general treatment as by the excessive virulence of the infective micro-organisms.

We have those who favor the use of strong solutions of nitrate of silver, those who prefer the weak, others who condemn its use in any strength; those who cleanse at intervals of ten or fifteen minutes with water or with antiseptic solution, others who object to such frequent disturbances. All have their quota of failures and their ratio of successes.

Representative of a conservative local treatment may be said to be hourly, thorough cleansing by douching with boric-acid solution; the application of a ten-grain solution of nitrate of silver to the thoroughly cleansed, everted palpebral conjunctivæ, once or twice daily, after the purulent discharge is established; atropine, in iodoform ointment, when the cornea is involved; canthotomy for threatening pressure effects; eserine, if peripheral perforation threatens; the use of zinc collyria when the acute stage has passed.

It should always be borne in mind, however, and this is one of the greatest points of failure, I believe, that it is difficult to have this treatment carried out properly by those usually in charge of these patients; in fact, nurses, well trained in the handling and care of babies, fall hopelessly short when called upon in this emergency, because of their manifest fear of doing violence in cleansing the eyes and making the applications.

Unless exceeding care is used and actual supervision frequently given, there is little hope that the treatment will be thoroughly carried out, for the skill required is far in excess of that attained by any but specially trained nurses. A full realization of this by ophthalmologists will lead to improved results.

An analysis of this treatment puts it under three heads:

(*a*) Removing the infective material mechanically and by antiseptics.

(*b*) Stimulating the circulation, the regeneration of the epithelium, and the secretions—*i. e.*, improving the resistance by increasing the tissue metabolism.

(*c*) Quieting the pain and immobilizing the iris.

It has been stated that this form of infection is especially virulent upon the conjunctiva because the cells are separated by relatively wide intercellular spaces, that these spaces are the seat of greatest colonization and development, and in them as in pus masses the germs are quite fortified against the action of antiseptics as they may be applied to the conjunctivæ. Then the palpebral mucosa is thrown into folds which hold germs and toxines not easily reached by the application. Aside from these considerations, the fact that the germs remain virulent and capable of infecting other conjunctivæ, often to the termination of the disease, makes the real issue as to the tissues acquiring and maintaining resistance more than neutralize the effects of the toxines. While nitrate of silver has undoubted antiseptic action, it owes its chief value in this affection to its effect, upon tissue metabolism, as mentioned in "*b*."

The power of combating the infection *per se* lies then almost entirely within the tissues themselves. Dr. H. V. Würdemann, in a recent article, called attention to some cases where failing general nutrition was the cause of untoward changes even after the severity of the symptoms had apparently subsided, and a few months ago a like case came into my hands with a similar history, cases which well illustrate the points brought out.

Aside from disease, these alterations in metabolism may arise from (1) poor quality of food or defective assimilation of foods or oxygen; (2) deficient elimination through skin, kidney, or bowel; and (3) lack of proper and sufficient rest and exercise; and the guarding of these essentials is to me of equal value with and at times more important than local treatment. They are things which persons inexperienced can well care for, and surely to point them out is our first duty, and to them I desire particularly to call attention.

1. Probably no one thing is more potent in producing disturbances of the *primæ viæ* of these patients than the fears of the nursing mother for her offspring. The effects of emotion upon the breast secretion are too well known to demand repeating, and we can do no better for our patient than not only to guard against undue fear on the part of the mother, but to regulate carefully her diet and habits during the critical period. Regularity of feeding is necessary to perfect assimilation. Far more outdoor air and sunshine should be allowed than are usually allotted them during the course of the disease. I can see no objection to "airing" these babies as much as consistent with the treatment with the same precautions as with well infants, and only the additional care in protecting the eyes from light.

2. Among the higher classes there is usually little need for calling attention to the necessity of daily bathing in health, but during such illnesses and among the lower classes there is. For some unaccountable reason the belief is common that water externally applied is harmful to sick babies. Bathing is necessary for these patients, and the morning tepid bath, followed by friction, is not only apparently more refreshing but is more invigorating than the evening warm bath. Warm water enemata are best for constipated conditions in the crisis, and pure water should be frequently offered for its flushing effect upon the emunctories of the body.

3. It has been the custom, and still is among general practitioners in many localities and with some oculists, to aim to induce rest by the use of paregoric or similar anodynes. Recognizing the necessities of rest, its effi-

cacy may well be doubted if it is attained at the expense of the two other desiderata, efficient assimilation and elimination. Effective in producing quiet and antiphlogistic while it lasts, the anodyne effect of opium can only be maintained and disastrous reaction forestalled by repeated dosing. In my case above referred to, there is no doubt that failure in nutrition was due directly to ill after-effects of this drug, and two opaque corneæ with adherent irides remain. That hyperæsthesia and increased congestion follow as a reaction is apparent on observation, and this means increased restlessness and subsequent difficulty in manipulation. Better means remain, and unnecessary opiates are harmful and their use should be condemned.

The use of cold compresses early in the affection has had well-deserved consideration at the hands of able writers. To be effective they must be continuously applied, and changed as often as necessary to maintain a low temperature.

The most menacing cases are those of such rapidly developing severity that time is not given for the reaction of the organism and the development of antiphlogistic forces. Cold, by retarding germ growth, affords the best means of a tentative nature. This treatment is rendered more efficacious, however, by immersing the feet and legs in warm water at intervals of four to six hours for ten to fifteen minutes at a time, keeping the parts in flannels in the interim. If immersion is impracticable, the fomentations mentioned below are easily applied by wrapping and quite effective. If nervousness, sleeplessness, or restlessness is present, there is no more effective way of quieting the patient, and if this fails cold compresses to the head will add quickly to the effect. By these means a very mild diaphoresis is also effected, the patient is refreshed, and the tone improved.

If, however, there is threatened corneal involvement, cold must be replaced by hot fomentations at intervals corresponding to the immersion of the lower extremities. I make use of a fomentation made by a soft woolen cloth wrung out in boiling water, quickly folded in a similar dry piece and applied, and left one or two minutes, the process being repeated three or four times; the relaxing effect upon the surface vessels is aided by passing ice over the skin or wiping with cold water between the applications.

These hydrotherapeutic measures should be kept up throughout the disease, the only change being the substitution of the fomentations for the compresses when the cornea is involved; and if opacities remain the daily use of the latter is still a most valuable aid.

It is important to bear in mind that the use of heat in the former instance is as a detergent, while in the second it is as a stimulant to prevent stasis and passive congestion. For this reason it is important that the temperature of the water in the leg bath should not be over 100° F., since, as has been shown by Dr. George Oliver in a Croonian lecture recently, hot baths at 100° to 105° F., while leading to immediate increase in the volume of the limb, are followed by a reaction, though, it should be stated, not to the initial volume—warm immersions, water at 96° to 100°, producing enlargement of the main arteries primarily, followed by a relaxation and filling of the peripheral system. This, I have found, the flannels will maintain for several hours.

Finally, I would speak of the great value of daily mild massage, especially kneading and spiral movements upward and passive joint movements, with babies whose peripheral circulation is sluggish, and I think, as a rule, this is the condition in these cases. It is surprising and gratifying to see the beneficent effects of passive exercise upon these infants.

We have in ophthalmia neonatorum a disease whose crisis is indefinite in its oncoming, an affection intense while it endures and destructive in its results; it is essential, therefore, that we devote all our energies and apply all expedients possible during the short time it lasts; and among them these attentions to general tone building take precedence, and this method of contra-congestion by hydropathic measures not only is an important adjuvant to this, but takes first rank in the local treatment by building up tissue resistance.

100 State Street.

THE
DIAGNOSIS OF PANCREATIC CARCINOMA.*

By EDWIN R. MAXSON, A.M., M.D., LL.D.,
SYRACUSE, N. Y.

In an article on Cancer of the Pancreas, which I furnished the *New York Medical Journal* of September 21, 1895, I gave the general symptoms of pancreatic carcinoma, which enabled me to make a correct diagnosis of two cases, as was verified by the post-mortems.

One of the cases involved also the pleura, lungs, and kidneys; while the pancreas was the only local manifestation of the disease in the other. But as none of the scirrhous growths had passed on to disorganization, except the pancreatic, the general symptoms in the two were quite similar.

And, further, as I only saw the cases in consultation, I could not get from the physicians in attendance as minute an idea of the special symptoms as might have been derived by an attendance upon the cases.

Neither was there such an abstruse complication of symptoms as are developed in cases in which the scirrhous growths, involving contiguous structures or organs, as the stomach, lungs, kidneys, or liver, have passed on to disorganization like the pancreatic.

The diagnostic symptoms in these cases were, mainly, the "cachectic countenance, anæmia, irregular or voracious appetite, a steady decline, loss of flesh without any apparent satisfactory cause, loss of discrimination in the taste and relish for food, with little or no preference as to taste, and emaciation, with overwhelming progressive weakness."

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* Read before the Syracuse Academy of Medicine, October 27, 1896.

It is probable that there was also some deep epigastric pain in paroxysms, at least, perhaps shooting to the right or all through the abdomen, "causing a bending forward" to get relief; constipation or diarrhœa, fatty stools, some pyrosis, etc., as well as the general symptoms above described, and possibly a trace of glycosuria, discovered or not by the attending physicians, as is quite common in such cases, and of which I have no definite account.

I received a letter of reference to the article of September 21, 1895, in the *New York Medical Journal*, from Dr. Fred W. A. Brown, of Oshkosh, Wisconsin, asking if "any sugar was found in the urine" in either of the cases; adding that he was "somewhat interested in the relation of disease of the pancreas to diabetes." While this may be an attendant, it is not an invariable symptom of pancreatic carcinoma, I am quite certain, though the question was eminently pertinent, and I was only sorry he did not state his observations in the matter. I received also a communication of September 26, 1895, from E. Melvin McPheron, professor of anatomy in the Ohio Normal University, of Ada, Ohio, stating that he "recently attended a post-mortem upon the person of a man of about fifty years of age, dead of cancer of the pancreas"; adding, "the case corresponds so closely with those related by you in your article in the *New York Medical Journal* of September 21st that I am persuaded to make mention of this one to you."

He further states: "This case was one in which much diversity of opinion had existed as to the real nature of the disease. The post-mortem showed it to be carcinoma of the head of the pancreas.

"The immediate cause of death was hæmorrhage into the stomach due to a sloughing of the coat at the point where the head of the pancreas had become adherent to it."

This interesting communication goes to confirm the foregoing symptoms as given, and also tends to show the difficulty of a correct diagnosis in these cases, as well as indicates an occasional and interesting complication in pancreatic carcinoma.

Still another interesting communication reached me from Dr. A. A. Browne, of 1002 Shubrook Street, Montreal, Canada, of September 24, 1895, as follows: "I have read with much interest in the *New York Medical Journal*, September 21, 1895, your account of Two Cases of Cancer of the Pancreas. I trust the history of a case under my care in the summer of 1894 may interest you.

"I began attendance on this lady July 1, 1894. She was a patient of a *confrère* who was in Europe at the time. She expected to be confined in about a month. Her age was thirty-seven or thirty-eight years. Appearance very anæmic. No icteric tinge. Consulted me for diarrhœa. This was painless, but the stools were large, dark green in color (not due to medicine—*e. g.*, bismuth, for it had not been given at this time), and tolerably frequent, four to six or eight in twenty-four hours. Treatment appeared to have little effect.

"She was confined rather unexpectedly July 4th. Labor easy, lasting about three hours in all. She had had previously two children.

"I was anxious about her at the time on account of the great weakness and poverty of blood. No post-partum hæmorrhage occurred, and she seemed for several days to do fairly well. The diarrhœa, however, continued and showed no sign of abatement under any treatment. The number of stools was reduced, however, to not over four in twenty-four hours; still dark green, and of the consistence of mud. Great debility. No voracious appetite was noticed at any time.

"She was a very docile patient, and well nursed; and she took as best she could any diet which was ordered for her. She, however, had no desire for food.

"She became progressively weaker all the time through August. I could find no abdominal tumor, nor could an able consultant who saw her with me.

"I told her husband that I felt she had a cancer somewhere, but that I could not say where. The profound anæmia and physical prostration led me to this conclusion, although the diarrhœa might have accounted for it to some extent.

"She died August 18th. Post-mortem by the pathologist to McGill University. An old, obsoletely dated cyst of the liver and cancer of the pancreas were the only things found. The cancer involved the whole pancreas, which was uniformly enlarged, though not to a great extent. No other organ was affected. I should say, however, that she had disease of the mitral valves, diagnosticated during life.

"No other sign of cancer was discovered anywhere on an exhaustive examination.

"No microscopic examination of the stools was made at any time, which I regret. No icterus was present at any time, but her appearance was extremely cachectic, even from the first.

"The interesting feature of this case," he adds, "is, I think, the condition of the bowels."

But to my mind every feature of it is fraught with interest, throwing light upon this rare and obscure disease.

In the cases reported by me, referred to, the cancerous degeneration of the pancreas was complete, no other part involved having passed on to that condition. In the case reported from Ohio an accidental gastric complication caused death by hæmorrhage before there had occurred total pancreatic disorganization. And in the case reported from Montreal, though the pancreas appears to have been quite generally involved, it had not become totally disorganized, as it had in the two cases I reported in the *New York Medical Journal*, which were really falling into decomposed particles.

And yet the diagnostic symptoms of the first three cases appear to have been nearly identical, as stated by Professor McPheron, of Ohio. And the same is true of the fourth case, in the more essential particulars, as reported by Dr. A. A. Browne, of Montreal, and confirmed by the pathologist to McGill University of that city.

These general diagnostic symptoms are: a cachectic countenance, anæmia, steady decline, unaccountable loss of flesh, indigestion, with constipation or diarrhœa, loss of a natural appetite and relish for food, with either no desire for it or else a craving for it, with little or no ability to discriminate as to taste or relish, and, finally, constant, persistent emaciation and overwhelming progressive weakness.

Various other symptoms may attend pancreatic carcinoma, as fatty alvine evacuations, glycosuria, abdominal pains extending from the region of the pancreas to the right shoulder, palpitation, nausea, headache, great despondency, and, when the hepatic duct becomes involved with the pancreatic, an icteric appearance is added.

When the general diagnostic symptoms I have named, and such of the occasional symptoms here enumerated as may be present, are carefully considered, and disease of the stomach, duodenum, liver, spleen, and other contiguous organs and structures can be excluded, remembering that the pancreas "is a conglomerate gland, analogous to the salivary gland," its secretion about six ounces a day, "being analogous to saliva," tending to change albumin into albuminose, starches into glucose, and emulsifying fats, and fully appreciating the symptoms likely to arise from a partial or total failure of these essential changes, a diagnosis of pancreatic carcinoma should generally be made.

818 Madison Street.

NASAL OBSTRUCTION
AND THE SYMPTOMS OF CARDIAC DISEASE.*

By GEORGE ROE LOCKWOOD, M. D.

I. Of all the symptoms of cardiac diseases, dyspnœa is perhaps the most important. To the physician the symptom appears as the earliest evidence of failing compensation, and suggests a train of subsequent events that sooner or later must terminate the life of his patient. To the patient the symptom is not only suggestive and distressing, but in many instances it interferes with physical activity and terminates his active career as a wage-earner, and too often is it the cause of his transfer from the workshop to the almshouse.

II. To the dyspnœa occurring during the course of cardiac disease a number of different causes have been assigned. The following classification is the one ordinarily adopted:

1. Dyspnœa from secondary anæmia.
2. Dyspnœa due to pulmonary congestion.
3. Dyspnœa due to hydrothorax and the mechanical displacement of the lungs.
4. Dyspnœa due to gastric or intestinal flatulence, favored by the congestion of the gastro-intestinal mucosa.
5. Dyspnœa due to uræmia or to contraction of the smaller arteries from the presence within them of noxious products that are not properly eliminated, owing to the congestion or inflammation of the kidney that so commonly is associated with cardiac disease.

From this array of causes your attention is invited to an additional one—nasal obstruction—a factor which in my humble opinion, has been hitherto neglected and undescribed. There is some difficulty in determining whether or not a patient with cardiac disease is more subject than are others to nasal inflammation and hypertrophy. Upon this point painfully accurate statistics are apt to be equally painfully misleading.

It first occurred to me to record the nasal condition of each cardiac case that came under my observation, and to compare the findings with those obtained from an equal number of control cases, representing as nearly equally as possible the same age, stature, and other physical conditions, but with normal hearts.

But as nasal conditions are so various and lack a positive line of demarcation between health and disease, and, moreover, because the soft parts, fairly normal at one examination, may be found congested and obstructive at the next, it seemed better to rely on personal impressions and not upon seemingly accurate data.

My general impression is that patients with cardiac disease are more subject to nasal obstruction than those with normal hearts. This clinical observation is corroborated by the following theoretical considerations:

I. The majority of subjects with cardiac disease are either rheumatic or gouty—either dyscrasia favoring catarrhal conditions of mucous membranes. Witness the gouty pharyngitis, bronchitis, colitis. Whether rheumatic angina and rheumatic tonsillitis really represent catarrhal conditions may be doubted, but certain it is that whatever the exact pathological changes may be, the result is commonly to induce a chronic catarrhal inflammation of these parts and their adjacent structures.

II. The texture of the turbinal bodies is such as to readily allow of their congestion and great enlargement, conditions which, it seems to me, are among the very earliest evidences of the general venous congestions that attend a failing heart. Even though the balance of circulation be again restored by rest or by cardiac tonics, it is readily conceivable that a low grade of inflammation may be left behind and result in hypertrophy and permanent enlargement.

What would be the symptoms induced or aggravated in a cardiac case by nasal obstruction?

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* Read before the New York Clinical Society, February 28, 1896.

1. Dyspnœa appears as the symptom most strikingly marked, and is altogether out of proportion to the other symptoms and physical signs of failing heart power. Nasal obstruction should be suspected in every case in which the symptom is well marked, and in which compensation in other respects seems to be well sustained. The dyspnœa may appear only on exertion, may be constant, or may be most marked at night. To the nocturnal attacks of dyspnœa I will invite your attention in a later section.

In many instances the dyspnœa is greatly aggravated by damp weather. It would seem that dyspnœa was more readily induced by nasal obstruction in cardiac cases than in those with normal hearts, as even a moderate obstruction in these patients may be followed by most distressing dyspnœa.

2. Secondary symptoms attend the insufficient supply of good air. Headache, of a dull, aching character, drowsiness, and mental hebetude are the most marked symptoms. Palpitation of the heart and præcordial oppression and distress are commonly observed.

It is conceivable that from deficient oxidation of the blood the arteries become irritated and contract so that more work is thrown on the heart already handicapped. This is not only what we would expect theoretically, but it is the only means we have of explaining the præcordial distress, pain, tightness of the chest, rapidity, intermittency of the heart with palpitation, that attend the nocturnal asphyxia attacks to be later described. Analogous symptoms, as is well known, occur in angina pectoris from a similar cause. Assuming this point, it would seem that nasal obstruction not only increased subjective discomfort, but also increased the mechanical work of the heart, and became an important factor in inducing dilatation.

3. Patients with cardiac disease who suffer from dyspnœa, and are therefore unable to exercise, rapidly become anæmic and flabby. We all know how disastrous are the results upon the muscular tissue of the heart. Without indorsing, in every detail, Oertel's method of treating weak hearts by graded exercise, still we can not deny that every patient with cardiac disease should have the maximum amount of air, exercise, and healthy surroundings that is appropriate to his individual case, and how can such conditions be obtained when the upper air-passages are so blocked that respiration is rendered insufficient?

By not realizing the importance of nasal obstruction as a factor in inducing these symptoms, the physician is apt to regard them as due directly to the failing heart, and to condemn the patient to an earlier grave than is warranted by the facts in the case. The mental suffering and anticipations of the patient must, if there was such a professional verdict, exert a most deleterious effect upon the general health and so indirectly reduce the vital force of the heart.

Coming now to the more purely clinical side of the discussion, we can divide nasal obstruction into, first, organic spurs, hypertrophies, etc., and second, congestive swellings not dependent upon hyperplasia of tissue. In many instances the two are combined. The presentation of the cases is from the standpoint of the physician rather than from the specialized standpoint of the rhinologist.

I. *Organic Nasal Obstruction.*—The effects of such condition in inducing and simulating pseudo-cardiac symptoms are brought out by the following clinical histories:

CASE I.—R. H., civil engineer, was twenty-seven years of age when he was first seen, December 7, 1892. At that time he gave the following history: In 1878 he had an attack of rheumatic fever and endocarditis. From that illness he recovered, complaining only of moderate dyspnœa on exertion until five years ago. Then, in 1887, after dancing, he had a severe attack of dyspnœa and has never been entirely free from it since, so that for the past five years he has not been able to go faster than a slow walk, and even then has to stop frequently to get his breath. During this period he has had frequent attacks of palpitation and sensations of extreme faintness (never amounting, however, to syncope), dizziness, headaches, spots before the eyes, a cough, and frequent attacks of bronchitis. There has been no œdema. The urine is free from albumin. He has been growing steadily worse, and has become anæmic and flabby. His mental condition is one of despondency and apprehension, and no prospect of relief has been offered to him by any of the physicians whom he has consulted. During these five years he has been under medical treatment for failing heart and with the above-mentioned barren result.

Heart examination showed double aortic lesion and the murmur of mitral regurgitation. The apex beat was one of pure hypertrophy, and there was but a moderate amount of enlargement. Compensation appeared to be perfect and well sustained, so that it seemed as if the heart could not be wholly accountable for his symptoms.

Nasal examination showed extensive spurs projecting from each side of the sæptum, imbedding themselves in the turbinated bodies, which were hypertrophied. Chronic pharyngitis; vocal cords congested.

In the belief that the nasal obstruction was responsible for the symptoms presented, the spurs were removed under cocaine, on December 10 and 27, 1892. Within a week he breathed better, the dyspnœa disappeared, and he felt improved in every way. He had no further headaches, dizziness, palpitation, or attacks of faintness. That spring he was able to ride twenty and thirty miles and more on his bicycle with pleasure and benefit. For three years he led an active life, free from every heart symptom. Examination of his heart, January 23, 1895, showed no change from the first examination. Had not his life been terminated by typhoid fever with perforation in December, 1895, he had every prospect of a long and active career in store for him.

CASE II.—F. R., a woman, aged fifty-five years. For a year she has complained of dyspnœa on exertion, and at night, so that it makes her nervous and prevents her from sleeping. She has frequent attacks at night, in which she wakes with dyspnœa, præcordial distress, and palpitation of the heart. She fears each time that she will die in one of these attacks.

Heart hypertrophied—three quarters of an inch outside nipple; aortic stenosis; apparently perfect compensation.

Nasal examination showed large spur projecting from the left side of the sæptum, imbedding itself in the opposing turbinal body.

Under appropriate nasal treatment, kindly administered by Dr. Colles, the dyspnœa entirely disappeared and the patient had no more nocturnal attacks. During the time in which she was under observation she received no direct medical treatment.

Case III.—Charles O'S., aged twenty-five years, October 28, 1895. A year ago he had rheumatism in his knees which went to his heart, so that he was sick in bed with dyspnœa and præcordial pain. Since then he has had such severe dyspnœa on exertion that he had been unable to do any heavy work. There are no other symptoms of any account.

Heart examination showed hypertrophy of left ventricle and aortic and mitral regurgitation. Apparently perfect compensation.

Nasal examination showed the nares obstructed by hypertrophied turbinated bodies.

The turbinated bodies were cauterized, and the patient was soon able to return to work without any complaint of dyspnœa whatever.

Case IV.—This case is incomplete at the present date as the results of treatment are not as yet known. It is interesting, however, as the cause for the obstruction seems to be in the nasopharynx and faucial space. S. D., a girl sixteen years old. Rheumatism seven years ago. Since then has complained of increasing dyspnœa, much worse in damp weather. From time to time she is awakened with urgent dyspnœa, præcordial distress, palpitation of the heart, and a sense of impending death.

Heart examination shows an enlarged heart, with double mitral murmurs and a presystolic thrill at the apex. Apparently good compensation.

There was a deflection of the sæptum narium, but plenty of nasal space. There were extensive adenoid vegetations in the nasopharynx, and tonsils sufficiently enlarged to meet in the median line. The expression, speech, and mental condition were classically those of adenoid disease.

Specialized treatment was advised, and is now under consideration by the family, so no further report can now be made.

II. Besides organic changes in the nasal tissues, simple congestion may at times cause blocking of the passages which might not be enough to embarrass a patient with a healthy heart, but which may, in patients with endocarditis, be just enough to upset compensation and to cause extreme dyspnœa.

In some cases the congestion depends upon an intercurrent coryza, as in the following case:

Case V.—Mary K., aged twenty-one years. Rheumatism four years ago, which was said to have "gone to her heart." Was well and free from dyspnœa until a week ago. Then, after a hard day's work and a long walk home in a drenching rain, she developed dyspnœa, which at night was so severe that she could not breathe lying down, but had to sit bolstered up by pillows. During the week her heart has palpitated, and beats rapidly and irregularly.

Heart examination: Moderately enlarged heart; presystolic murmur at apex. Apparently perfect compensation.

Nasal examination showed an extensive spur on the left side of the sæptum; subacute rhinitis, with considerable congestive enlargement of the turbinated bodies.

Ordered Dobell's solution. No medical treatment for heart. Two weeks later reported herself as entirely free from all dyspnœa and other complaints. Nose was examined, and free breathing space demonstrated on both sides.

The most characteristic cases are those in which the patient is waked at night with dyspnœa. He may be well during the day or may complain only of moderate shortness of breath. Examination of the nose during the day may reveal abundance of air space. Usually, however, the turbinated bodies show great vasomotor irritability, and rapidly swell when they are irritated by a probe, so as to occlude the air-passages.

The nocturnal attacks are characterized by dyspnœa, præcordial distress, feebleness and irritability of the heart's action, and a sense of impending death. Immobility of the thorax during an attack does not, however, seem to occur.

The attacks appear to be caused by asphyxia, due to congestion and swelling of the posterior portion of the turbinated bodies. This congestion is favored by the recumbent position of the patient and by the sluggish state of the circulation, especially during the early morning hours. The dyspnœa, præcordial pain and distress, intermittency of the heart, and subjective palpitation seem to be evidences of arterial spasm from the irritation of suboxidized products within them.

Similar congestive states may exist during the day, but the patient is then awake, and able to breathe by preference through the mouth so as to get plenty of air.

These nocturnal attacks are marked in Cases II and IV, already cited.

An interesting case, in this connection, is Case VI.

Case VI.—Mrs. G., aged forty-two years, who is known personally to have had double aortic lesions for ten years.

October 28, 1895.—Patient under treatment for the heart lesion for three years without any benefit; on the contrary, is growing slowly but steadily worse.

She has dyspnœa on exertion so that she can not walk more than a block, no matter how slowly, without being obliged to sit down to get her breath. The dyspnœa is worse in damp weather. She has headaches, spots before her eyes, dizziness, and attacks of faintness. Every night or so she is awakened by palpitation of the heart, faintness, urgent dyspnœa, and a sense of impending death, so that she dreads all day to go to bed at night, thinking that each night may be her last.

October 28, 1895.—Heart examination shows enlarged heart; double aortic murmurs; apparently good compensation, as the apex-beat is one showing hypertrophy rather than dilatation. No general venous congestions; urine free from albumin.

Nasal examination shows moderate hypertrophy of inferior turbinated bodies, but great vasomotor irritability. Treated October 28th with cautery by Dr. Colles.

November 8, 1895.—Returns for first time since cauterization; says that she has had no more nocturnal attacks; her breathing at all times is easier, and there is much less dyspnœa on exertion.

December 17, 1895.—Can breathe now perfectly well. Been at work as laundress for past three weeks without losing an hour from ill-health (this is the first time in four years that she has been able to work). She can now walk three miles at a brisk pace without dyspnœa, and takes such a walk almost daily for the pleasure of the exercise it affords.

March 23, 1896.—Patient's improvement has continued until the present time. She is at her regular work, and feels perfectly well.

In rarer cases the nocturnal attacks are not characterized by dyspnœa, as in the following case:

CASE VII.—Mary C., aged fifty years.

January 10, 1896.—For a year she has complained of dyspnœa on exertion, and nocturnal attacks. She is awakened almost every night with palpitation of the heart, faintness, and a sense of impending death. The attacks are more severe in damp weather.

Heart examination showed aortic stenosis and apparently perfect compensation.

Nasal examination showed moderate hypertrophy and great vasomotor irritability of both inferior turbinated bodies.

She was ordered Dobell's solution as a nasal douche, and was given no other medical treatment. Within a few days the dyspnœa on exertion became much less; the nocturnal attacks ceased, and have not as yet reappeared.

The following case is of great interest, as the attacks so closely resembled angina. In this case, also, dyspnœa was never present as a symptom.

CASE VIII.—The patient was a man thirty years of age. There was no neurotic family history, and no history of rheumatism or arterial degeneration. He was somewhat flabby and slightly anæmic, although his habits were abstemious in the extreme, and for years he had led an active out-of-door life. He was somewhat nervous in little ways, dreamed of his business at night, and was inclined to worry about trifles. He was first seen February 1, 1891, and gave, at that time, the following history:

From 1884 to 1888 he suffered from attacks of angina pectoris at intervals of from one week to three months. In 1888 he went to California, and there the attacks became less frequent. He returned to New York in December, 1890, and from that time until his first visit to me, two months later, the attacks recurred at intervals of three to ten days. In the past twelve days he has had four such attacks.

His account of the paroxysms I give in his own words:

"I retire in good health, often feeling at my best. I wake usually between 2 and 4 A. M. with a sense of extreme uneasiness and apprehension. My pulse immediately begins to lower, and almost disappears. At times it alternates—strong, and then weak. There is usually, but not invariably, at this time a feeling of tightness in the upper part of the left chest, and sometimes a pain over the heart which, however, is never severe. There is always, however, a feeling of tension, which is most distressing. At times this feeling of tension starts from each side of the trunk, envelops the body, and then extends to the limbs; at other times it originates in the calves of the legs and extends upward. There is a sense of fullness at the pit of the stomach, and I am conscious of an irregular beating of the heart in this situation. The attack is terminated by a series of nervous tremors. In ordinary attacks there are from eight to fifteen distinct tremors over the entire body. In severer attacks I have a repeated series of these, and between the tremors the pulse is usually much stronger. The duration of the attack is from a quarter to three quarters of an hour, and during the following day I suffer from mental depression and extreme lassitude."

Cross-examination showed that these attacks were not induced by errors in diet, indigestion, or bodily fatigue, but could be usually traced to any cause using up his nerve force, such as study, deep reading, or nervous excitement. The heart was normal in size; there was a systolic murmur at the apex, which was probably of anæmic origin. The urine was negative. The arteries were not thickened, and the blood tension was not increased. He had been treated for pseudo-angina and for angina. He was put on the use of ten grains of iodide of potassium three times a day for several weeks without benefit. In the absence of any definite cause for these attacks, it struck me that the paroxysms might be asphyxia—attacks from a reflex nasal hyperæmia, favored possibly by some organic lesion within the nasal cavities, and further favored by the general nervous irritability of the patient. On examination of the left naris there was found a large, sharp spur which, projecting from the sæptum, imbedded itself in the inferior turbinal body, which was hyperæmic, but not hyperplastic. On March 10th the spur was removed, and since then he has not had a single attack. He was able, within two weeks after the operation, to work mentally and physically as he had not been able to do for years, and now is leading a most active ministerial life.

SUMMARY.—I. It is highly probable that patients with cardiac disease are more subject than others are to nasal obstruction.

II. Nasal obstruction occurring in a patient with cardiac disease may upset the balance of respiratory compensation and produce decided symptoms.

III. Unless care be taken, these symptoms may be mistaken for those of failing compensation, and may lead to a gloomy prognosis and a faulty treatment.

IV. Unless the nasal obstruction be properly relieved and the patient allowed a sufficient quantity of good air, the arterial spasm may possibly occur, throwing an increased amount of work on the heart already handicapped, and may become a factor in inducing dilatation. The effect of the poor quality of the blood thus supplied to the endocardium must also be taken into consideration.

V. Nasal examination made during the day may not reveal the actual obstruction, which is most apt to appear at night when the patient is recumbent and the circulation is in its most sluggish state. To the congestion of the posterior portion of the inferior turbinated bodies thus induced, the characteristic nocturnal attacks are to be ascribed through the medium of asphyxia and arterial contraction. Nasal examination; however, usually reveals extreme vasomotor irritability of the turbinated bodies.

VI. In cases of cardiac disease, including angina and pseudo-angina pectoris, no estimate of the patient's condition can be made, and no rational treatment can be inaugurated, without a thorough examination of the patency of the upper respiratory passages.

44 West Forty-ninth Street.

THE USE AND ABUSE OF THE STOMACH TUBE.*

By FRANK H. MURDOCH, M. D.,

PITTSBURGH, PA.

My reason for writing this article is the fact that a great many physicians seem to be under the impression that specialism in the treatment of diseases of the stomach consists principally, at least in all refractory cases, in the systematic use of lavage. It is perhaps true that after the soft tube came into general use washing out the stomach was tried in almost every form of disorder, but it is also true that to-day we know that lavage is no more indicated in every serious form of stomach trouble than is digitalis in every serious disease of the heart. Both are remedies potent for good when employed in carefully selected cases, and both, by being used indiscriminately, may do infinite harm.

To treat diseases of the stomach successfully, we must become familiar with the condition of every other organ in the body. In addition to finding out what the patient complains of, and whether these complaints have any time relation to the ingestion of food, we must look into the condition of the teeth, the tongue, the heart and lungs, the brain, and the general nervous system. We must examine the liver and ascertain if the kidneys are in their normal position, and whether or not there is enlargement of the spleen. We must analyze the urine and see if we can find sugar or albumin or casts, or any evidences of fæcal absorption, and, at least in cases of suspected cancer, we should also examine the blood. We must determine the size and position of the stomach, if necessary by dilating it with air, or by means of the gastrodiaphane; and yet, after we have done all this, we may, at least in very many cases, be left to grope in the dark, unless we go still further and make an analysis of the gastric contents. It must not be supposed, however, that such an examination is necessary in the case of every patient who comes to us, but in serious trouble of long standing no other means of diagnosis will enable us to do justice either to ourselves or our patients.

And this brings me to speak of the stomach tube itself, which may be used—

1. For diagnostic purposes.
2. To empty the stomach in certain forms of poisoning.
3. For lavage.

For diagnostic purposes the soft tube should be dipped in warm water and introduced into the stomach an hour after Ewald's test breakfast has been taken, and the contents obtained by expression. After filtering, we examine for hydrochloric acid and ascertain the amount. We then examine for organic acids, for rennet and pepsin, for albumin, propeptone and peptone, for erythrodextrin, achroodextrin, and sugar. This examination will enable us to determine what drugs, if any, are required, and it will also inform us as to what the patient should eat, a question which is always of prime importance in the treatment of these cases.

The second indication for using the stomach tube is to evacuate the stomach in certain forms of poisoning. Here the soft tube should also be used, and it may be introduced into the stomach even when the patient is in a state of deep coma (1). It was in 1875 that Ewald, being called to see a case of prussic-acid poisoning, accidentally discovered that a piece of gas-tubing could be made to reach the stomach, and ever since soft tubes instead of hard ones have been in general use.

The tube should not be passed in poisoning from caustic alkalies lest the wall of the stomach might be perforated, and in cases where acids have been swallowed it is rarely necessary to use it, as they may be readily neutralized by alkalies.

In regard to the third point, Einhorn (2) employs lavage in just two conditions—viz., stagnation of food in the stomach, and in cases where a large amount of mucus is found in the organ. Ewald uses it in similar conditions, and also recommends it in chronic gastritis, as a means of increasing the activity of the glands (3).

Whenever there is stagnation of food in the stomach there is dilatation of the organ, and it is in this class of cases that lavage has given such brilliant results. This treatment, however, even when combined with proper diet and regular exercise, will only give relief so far as the subjective symptoms are concerned, but will not cure the dilatation; for when the stomach becomes chronically enlarged, it never again returns to its normal size (4). Occasionally a large quantity of mucus is found in the stomach in cases of hyperchlorhydria (as in Case VI, reported at the end of this paper), but as a rule we find it most frequently in gastric catarrh, where the hydrochloric acid is diminished or absent. In cases where we have reason to believe that the gastric juice is absent, not on account of atrophy of the mucous membrane, but owing to causes not yet fully determined (5), even where there is no mucus and no dilatation, lavage may be useful in helping to restore the glands to a condition of activity.

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* Read before the Pittsburgh Academy of Medicine, November 16, 1896.

The abuse of the stomach tube consists in employing it in any other conditions than in those just mentioned.

Its use is contraindicated, according to Martin (6), in thoracic aneurysm, in serious cardiac disease, in recent bleeding from any part, in great debility, or in patients of advanced age, and in gastric ulcer. The dangers connected with its use are: syncope from sudden filling and emptying of the stomach, thus changing the pressure on the great abdominal plexuses, and tetany, of which several fatal cases have been reported, and which could not be attributed to any other cause.

Permit me to say, in closing, that in looking over my note-book I find that in fifty-nine patients, recently treated for stomach troubles, many of them of a serious nature and of long standing, lavage has been used only in the six following cases:

No.	Name.	Age.	Duration of illness.	Condition indicating lavage.	Am't HCl.	Total acidity.
1	Mr. H. F. S.	33	7 months.	Gastroptosis and dilatation.	84	144
2	Mr. J. M. McK.	51	2 years.	Motor insufficiency and dilatation.	52	68
3	Mr. J. B. H.	34	8 months.	Constant distress, vomiting, bloating, and belching.	0	40
4	Mr. R. A. C.	22	18 months.	Constant distress and at times pain; daily vomiting; had lost 52 pounds in weight.	0	28
5	Mr. F. T. D.	65	7 years.	Distress in stomach, preventing sleep; bloating and belching.	0	80
6	Mr. H. A.W.	46	20 years.	Distress after eating, bloating and belching; large quantity of mucus.	44	76

It will be seen that in three of these cases there was absence of hydrochloric acid. In one of them (No. 3) the gastric juice returned in normal quantity after three months of treatment. The other two patients live out of the city, and I have not yet had an opportunity of making a second examination of their gastric contents.

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1. Ewald. *Diseases of the Stomach*, p. 331.
2. Einhorn. *Twentieth Century Practice*, vol. viii, p. 184.
3. Ewald. *Diseases of the Stomach*, p. 343.
4. Ewald. *Diseases of the Stomach*, p. 150.
5. Einhorn. *Medical Record*, June 27, 1896.
6. Martin. *Diseases of the Stomach* (London), p. 154.

515 PENN AVENUE.

A NEW METHOD OF HYSTEROPEXY.

By CARL BECK, M. D.,
NEW YORK.

THE technique of this method is the following: After the abdomen is opened in the usual manner through the linea alba, a small incision being sufficient, the fundus uteri is seized with a volsella and pulled outside of the peritoneal cavity. Then a round ligament is selected and carefully isolated. This is done first by making two superficial incisions, about two inches in length, on each side of the ligament, which extend downward from a point situated half an inch below its uterine origin. With a grooved director the isolation can now be perfected in a blunt manner, this being an easy and nearly bloodless procedure. The isolated portion is now pulled outside of the peritoneal cavity with an aneurysm needle and held up, while below it the edges of the peritonæum are united, thus making this part of the ligament ride on the united peritonæum. Five or six sutures are required for that purpose. Then, by still holding up the ligament, fascia and muscles are also united below it in the same manner, so that it rides at last on the fascia, thus being supported by nearly the whole abdominal wall. The rest of the wound edges are united in the usual manner and a third row of sutures through the skin edges finishes the operation.

Both round ligaments may be used for the same purpose. The immense strength of the ligamentous fibres of one, however, should be sufficient for securing suspension for prolapsus uteri. For retroversion, fixation of both should be considered.

I have carried out this method recently on a woman, forty-five years of age, with perfect success, so far as can be ascertained now. The upper portion of the right round ligament was fixed in the upper third of the wound, thus leaving the fundus uteri four inches above the symphysis. The reaction was *nil*. Further experiments will be required to establish the strict indications for this new method of procedure, which I put forward as an easy method, furnishing an absolutely firm support with mobility of the uterus.

FŒTAL DEATH OCCURRING AT DIFFERENT DATES IN A TWIN PREGNANCY.

By J. SHERMAN WIGHT, JR., M. D.,
BROOKLYN.

CASES of twin pregnancy occur with apparent disparity in the period of gestation of each child. This leads to the use of the term superfœtation.

Mrs. G. was taken in labor after a long bicycle ride. When I reached her, she had given birth to twins. One of them measured fifteen inches and the other ten inches in length. The development, therefore, had gone on for about seven months in one and for five months in the companion fœtus. In the larger fœtus the sexual organs were more fully developed and there was a more abundant growth of hair and nails. It might appear on casual examination that the period of gestation had differed in the two fœtuses by two months. From cases similar to this arose the belief, formerly entertained, in the possibility of superfœtation, or, in other words, a twin pregnancy originating in the impregnation of two separate ovules thrown off at different periods of ovulation. In the foregoing case the assumption of superfœtation is clearly precluded, for the children were of the same sex (females); there was a single chorion with two amnions, both of which were intact, and a common placenta. The twin conceptions evidently occurred from the double impregnation of a single egg with a double germ. The twins, therefore, began development at the same time and the difference in maturity implies only that one died at the fifth month of gestation, the other continuing to grow till the seventh. Counting from the date of the last menstruation, the labor was premature by about two months; so the more mature child must have died shortly before or during delivery.

In the case of twins from separate ova, born at the same time yet in different stages of development, the refutation of the theory of superfœtation is not so easily established. Yet all such cases are doubtless to be explained by the blighting or death of one fœtus a month or more before its birth. Superfœtation is probably an impossibility, for the reason, if we accept the views of most embryologists, that ovulation does not occur during gestation.

30 Schermerhorn Street.

Therapeutical Notes.

Formaldehyde as a Remedy for Sweating of the Feet.—The *Presse médicale* gives this formula:

℞ Formaldehyde	1 part;
Water	100 parts.

M. A sponge is to be moistened with this solution, nd the feet, including the interdigital spaces, are to be ubbed briskly with it every morning, or twice a day in ebellious cases.

A Mixture for Whooping-cough.—The *Therapeutische Wochenschrift* attributes the following formula to Dr. R. A. Lancaster:

℞ Tincture of belladonna	10 parts;
Phenacetine	5 "
Alcohol	15 "
Fluid extract of castanea	60 "

M. S.: Ten drops at intervals of from two to six ours (for children under a year old), increased up to a easpoonful for children ten years old.

Ichthyol in Gynæcological Practice. — The *Presse édicale* attributes to Günzburg the statement that ichhyol, given internally in doses of a grain and a half, rom once to four times a day, is of great service in inlammatory diseases of the genital organs in women. he ichthyol is given in the form of pills made with exract of licorice.

Menthol in the Treatment of Seasickness.—M. Morel-avallée (*Bulletin médical de Paris*, December 13, 1896; *yon médical*, December 27, 1896) has observed on sevral occasions the cessation of the vomiting of seasickess induced by giving the patient a teaspoonful of the ollowing mixture every half hour:

℞ Menthol	1 part;
Cocaine hydrochloride	2 parts;
Alcohol	600 "
Syrup	300 "

M.

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THE ÆTIOLOGY OF DENTAL CARIES.

For what is accurately known of this subject we are largely indebted to two American odontologists who have established themselves in Europe. One of them is Professor Miller, of the University of Berlin, whose studies of the mycology of the mouth are well known. The other is Dr. J. Leon Williams, of London. A notable meeting of the New York Odontological Society was held on Tuesday evening of this week, under the presidency of Dr. William Carr, at which Dr. Williams read a paper entitled A Contribution to the Study of the Pathology of the Enamel. The paper, with the numerous and beautiful screen pictures of photomicrographs with which it was illustrated, was the first actual demonstration of the direct agency of micro-organisms in effecting the disintegration of sound and well-formed enamel.

There is a great difference in the quality of the enamel in different individuals, chiefly as regards the integrity of the cement substance that occupies the spaces between the enamel rods. Lacunæ are often found, sometimes amounting to canals that extend almost if not quite to the free surface of the tooth. They are met with in the teeth of many of the lower animals as well as in those of man, but those animals are not affected with caries; they are observed also in human teeth that are not carious. But caries attacks enamel that is perfectly formed; as Dr. Williams put it, let the enamel be ever so perfect, let the pathogenic micro-organisms collect on its surface, and it is doomed. These organisms form a felted, gelatinous mass beneath and within which lactic acid is generated. Being confined by the mass, it acts upon the enamel. It makes its way between the rods, undermining their support, and at last they give way.

Dr. Williams has succeeded in a task that has baffled almost every investigator who has ever attempted it, that of grinding a section of a carious tooth thin enough to bring out its structure under high-power lenses, and yet preserving the micro-organisms still attached to the edge of the section corresponding to the carious cavity. Photomicrographs of many such sections were projected on to the screen, showing the effects of invasion of the cement substance by lactic acid, and in some cases the actual penetration of microorganisms into canals formed by the action of the acid. The demonstration was absolutely convincing both of the truth of the theory of the bacterial origin of dental caries and of the marvelous excellence of Dr. Williams's work in making the sections.

The discussion of the subject was opened by Dr. G. V. Black, of Jacksonville, Illinois, who had arrived at precisely Dr. Williams's conclusions from different methods of study.

THE USE OF CAMPHORIC ACID IN EXCESSIVE SWEATING.

In an article on this subject in the January number of the *Edinburgh Medical Journal* Dr. Ralph Stockman refers to the early experiments made by Gormanni and Brugnatelli, the results of which showed that this drug readily destroyed the tubercle bacillus, and that sputum after treatment with it failed to infect rabbits. Fürbringer, he says, used it as an intestinal antiseptic in typhoid fever, and found that it greatly diminished the number of organisms in the alvine discharges, but had no effect on the duration or the severity of the fever. In the course of these observations it was noticed by Fürbringer that it checked the secretion of sweat, and he then began to use it in cases of phthisical sweating. Other trials, says Dr. Stockman, by Dreesmann, Bohland, Niesel, Combemale, and others confirmed this observation; and all these investigators speak highly of its action and place it in the very first rank as an anthidrotic.

Dr. Stockman states that it has been used only to a comparatively limited extent, and that, although it is said to act more powerfully than either atropine or agaricin, the experience on which this opinion is founded is not very extensive. He himself began to use the drug four years ago, and since then he has given it pretty largely in phthisical and other cases of sweating. One case was that of a lady who had been treated by electricity for a myoma of the uterus. She suffered greatly at night from excessive sweating, and occasionally also during the day. Dr. Stockman ordered her fifteen grains of camphoric acid at night, and this completely stopped the sweating. After taking it for two weeks she found that the tendency to excessive sweating had completely disappeared, and since then it has not recurred. Shortly afterward Dr. Stockman again used it successfully in a patient with enlarged prostate, who suffered from profuse sweating without any apparent cause. This tendency to perspire profusely has recurred at intervals, but is always stopped by fifteen grains of camphoric acid taken once or twice a day, and sometimes one dose is sufficient. The author has also used it in cases of hyperidrosis after influenza and in other cases in which there was certainly no tubercle present, and in all of them doses of from fifteen to thirty grains have given good or fairly satisfactory results.

Dr. Stockman emphasizes its value in non-tuberculous cases, because it has been stated that its usefulness is confined to the sweating of phthisis, in which its value is quite comparable to that of belladonna or atropine. According to the author's experience, camphoric acid acts as efficiently as atropine, but in one or two obstinate cases it has not shown itself so powerful an anthidrotic as picrotoxin. It exercises, he says, no specific germicidal action on tubercle bacilli in the tissues, and it does not affect the fever or local lung condition.

With regard to its administration, Dr. Stockman thinks that the best plan is to give thirty grains at night two or three hours before the sweating begins, or it may be given in two doses at short intervals. It is best administered in powder or in capsules or cachets, as the alcoholic solution is very bitter. Owing to its insolubility, he says, it is only slowly absorbed from the intestinal canal, and this is the reason why it must be given so long before the time of sweating. This slowness of action is, Dr. Stockman thinks, undoubtedly a drawback as compared with that of atropine or picrotoxin, which can be given hypodermically, and act rapidly. Camphoric acid is excreted in the urine within twelve hours after its administration by the mouth, so that its action is usually not very prolonged.

The only unpleasant effect seen by Dr. Stockman has been slight irritation of the stomach after its use. It is said, however, to cause renal irritation, and in one case it was apparently the cause of a skin eruption. It seems to be non-poisonous, he say, even in large doses, and in this respect has distinctly an advantage over belladonna, picrotoxin, and agaricin. Fürbringer has given as much as seventy-five grains a day in typhoid fever, and Niesel gave seven hundred and fifty grains in four weeks in a case of cystitis, without any toxic or unpleasant symptoms being produced. He adds that his own experience also bears this out, as he has never noticed any depression of the heart or nervous system, and Wagner has found that camphoric acid has much the same effect as camphor on the circulation, that it acts as a stimulant to the heart and raises the blood pressure.

In order to ascertain its mode of action, Dr. Stockman made some experiments on frogs and on sweat secretion in cats. The experiments on frogs showed that it was not very toxic to these animals. Doses of from two to four grains by the mouth or subcutaneously caused slight depression which lasted for some hours and was then succeeded by great increase in the spinal reflexes which lasted for several days. Given in this way, it scarcely affected the motor nerves and muscles, but if the same dose was injected directly into the aorta of pithed frogs, both motor nerves and muscles were paralyzed. Its action differs, therefore, very considerably from that of camphor. Doses up to seventy-five grains had very little effect on rabbits beyond causing slight depression, sometimes followed by a very slight increase of reflexes. The toxicity of camphoric acid is, therefore, remarks Dr. Stockman, very slight in animals as well as in man.

MINOR PARAGRAPHS.

THE HEBREW SHELTERING GUARDIAN SOCIETY ORPHAN ASYLUM.

In our last issue we printed, by request, a statement from the consulting medical board of the asylum to the effect that the medical report contained in the recent *Annual Report* had been made without their knowledge or consent. Having since seen a copy of the report, so called, under which term the gentlemen of the consulting board may be presumed to have meant to nclude also the appendix reprinted from a medical journal, we can readily imagine that it was published without their knowledge or consent. It is unusual, to say the east, for the author of a report on the medical management of an institution to criticise the work of his predecessors in the report, and the reprinted appendix, dealing with such matters as vulvo-vaginal inflammation in children, seems to us out of place in a pamphlet that will naturally come into the hands of some of the laity. The consulting board may well disclaim responsibility for it. Such a course we think very mild.

THE EDINBURGH MEDICAL JOURNAL.

With its 498th number, concluding volume xlii, this venerable monthly closed a series, and the number for January, 1897, is the first of volume i of a new series. t is now edited by Dr. G. A. Gibson and published by Young J. Pentland. In its general appearance it is much improved, and there is no deterioration of its mater in quality. The number of pages is increased to a hundred and sixteen. The book reviews are signed. We wish it all possible prosperity.

SIR JOSEPH LISTER A PEER.

Queen Victoria conferred an honor on the British House of Peers when she recently made Sir Joseph Lister a peer of the realm. He is the first member of the medical profession to have his merit so thoroughly recogized.

A NEW CANADIAN JOURNAL.

We have received the first number of a new monthly ntitled the *Canadian Journal of Medicine and Surgery*, ated January, 1897. It is edited by Dr. W. A. Young, Dr. J. J. Cassidy, and Dr. E. Herbert Adams, and published in Toronto. The number contains forty-eight large and handsomely printed pages of reading matter. We welcome our new contemporary.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 12, 1897:

DISEASES.	Week ending Jan. 5.		Week ending Jan. 12.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	17	6	9	5
Scarlet fever	152	8	153	13
Cerebro-spinal meningitis	1	1	2	1
Measles	142	5	159	7
Diphtheria	267	26	266	27
Croup	0	0	8	6
Tuberculosis	226	105	128	127

The Constitution of the Greater New York Board of Health.—The following is addressed to the Greater New York Commission:

"At a stated meeting of the New York Medico-surgical Society, held on January 4, 1897, the following resolution was unanimously adopted:

"'*Resolved*, That the president appoint a committee of three to draw up resolutions protesting against the clause in the draft of the charter for the Greater New York which reads as follows: "The health commissioner who is not a physician shall be president of the board."'

"The committee was further instructed to present said resolutions to the proper authorities. We, the said committee, acting in accordance with these instructions, would respectfully protest to the commission that the clause discriminating against a physician is unnecessary and ill-advised. We would respectfully urge that the appointing power should have the authority to select the best man for the place irrespective of his profession or calling.

"Respectfully submitted,

[Signed.] "Morris Manges, M. D.,
"William H. McEnroe, M. D.,
"C. C. Fite, M. D., *Chairman.*

"New York, *January 11, 1897.*"

The Society of Medical Jurisprudence.—At the one hundred and twenty-third regular meeting, on Monday evening, the 11th inst., the inaugural address was to be delivered by Dr. Edward F. Brush, and a discussion on the subject of The New Law relating to the Commitment of the Insane was to be opened by Dr. E. C. Spitzka.

The New York Academy of Medicine.—At the recent annual meeting officers were elected as follows: President, Dr. Edward G. Janeway; vice-president, Dr. Everett Herrick; trustees, Dr. Joseph D. Bryant and Dr. Clement Cleveland.

The Tri-State Medical Journal and Practitioner is to be the name of the consolidated *Tri-State Medical Journal* and *General Practitioner*, the last-named journal having been bought by Dr. James Moore Ball, of St. Louis.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending January 9, 1897:*

Arnold, W. F., Passed Assistant Surgeon. Detached from the U. S. Steamer Enterprise and ordered to the U. S. Steamer Richmond.

Atlee, L. W., Passed Assistant Surgeon. Detached from the U. S. Steamer Richmond on relief and ordered to the Naval Hospital, Philadelphia.

Bradley, G. P., Surgeon. Ordered to examination for promotion. Washington, D. C., January 18, 1897.

Crandall, R. P., Passed Assistant Surgeon Detached from the U. S. Steamer St. Mary's and ordered to the Naval Hospital, Norfolk.

GUEST, M. S., Passed Assistant Surgeon. Detached from the U. S. Steamer Massachusetts and ordered to the U. S. Steamer Vesuvius.

MORRIS, LEWIS, Assistant Surgeon. Promoted to Passed Assistant Surgeon from June 27, 1895, and ordered to the U. S. Steamer Essex.

TRYON, J. R., Medical Inspector. Ordered to examination for promotion. January 11, 1897.

WELLS, H. M., Medical Director. Retired, January 20, 1897.

Society Meetings for the Coming Week:

MONDAY, *January 18th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *January 19th:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings (annual) and Otsego (semiannual—Cooperstown), N. Y.; Connecticut River Valley, Vermont, Medical Association (Bellows Falls); Baltimore Academy of Medicine.

WEDNESDAY, *January 20th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

THURSDAY, *January 21st:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Massachusetts, Society for Medical Improvement (private).

FRIDAY, *January 22d:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *January 23d:* New York Medical and Surgical Society (private—annual).

Births, Marriages, and Deaths.

Married.

BOWMAN—BERWICK.—In Centreville, Louisiana, on Thursday, January 7th, Dr. Ira Bowman and Miss Virginia Adelaide Berwick.

CRANE—BARTLETT.—In Kalamazoo, Michigan, on Thursday, December 31st, Dr. Augustus W. Crane and Miss Caroline J. Bartlett.

HANSON—LECHE.—In Donaldsonville, Louisiana, on Wednesday, January 6th, Dr. T. A. Hanson and Miss Aline Leche.

HAYS—LYND.—In New Orleans, on Thursday, December 31st, Dr. George A. B. Hays and Miss Elizabeth Lynd.

JAMES—WALKE.—In Cheraw, South Carolina, on Wednesday, December 23d, Dr. Thomas H. James and Miss Arline Ruth Walke.

PRIOLEAU—FROST.—In Summerville, South Carolina, on Wednesday, December 30th, Mr. William Hutson Prioleau, son of Dr. W. H. Prioleau, and Miss Harriet Horry Frost.

ROY—ELLIS.—In Richmond, Virginia, on Wednesday, December 16th, Dr. Dunbar Roy, of Atlanta, Georgia, and Miss Carrie Ellis.

Died.

BRUMLEY.—In Newark, New Jersey, on Thursday, January 7th, Dr. John Duane Brumley, in the sixty-third year of his age.

CHANNING.—In Pasadena, California, on Saturday, January 2d, Mrs. Mary J. Channing, wife of Dr. William F. Channing, formerly of Troy, N. Y.

KETCHUM.—In Brattleboro, Vermont, on Saturday, January 9th, Dr. Benjamin F. Ketchum, in the sixty-first year of his age.

MAGEE.—In Troy, N. Y., on Monday, January 4th, Dr. Daniel Magee, in the fifty fourth year of his age.

MUNSON.—In Sharon, Connecticut, on Sunday, January 3d, Dr. Byron W. Munson, aged fifty-three years.

NEWTON.—In Everett, Massachusetts, on Thursday, December 31st, Mrs. Ida P. Newton, wife of Dr. E. Cazneau Newton.

PANCOAST.—In Philadelphia, on Monday, January 4th, Dr. William H. Pancoast, aged sixty-four years.

WHITE.—In Cortlandt, N. Y., on Tuesday, January 12th, Dr. Asa J. White, in the fifty-ninth year of his age.

Letters to the Editor.

THE ACTION OF RÖNTGEN RAYS ON VISION.

216 SEVENTEENTH STREET, BROOKLYN, *January 12, 1897.*

To the Editor of the New York Medical Journal:

SIR: I beg to report that of seven persons with amaurosis, subjected to the Röntgen rays, six observed the *Sternschuppenlicht,* a peculiar shooting-star light. I have used the German name, as that seems to cover the description or character of the phenomenon. Four of the patients could count the individual stars, ranging between six and thirty-two in number.

The former were not totally blind, that is, they could locate a sixteen-candle-power electric light, with one or both eyes, at variable distances of from three to eight feet. The patient counting thirty-two of these sparklike sensations, using both eyes, could distinguish and locate a lighted lamp at a distance of five feet. The patient who did not respond to the rays had been injured early in life, and both globes had been removed. It is needless to say that none of the patients were enabled to see with the aid of these rays, although by cutting off the rays by the interposition of a steel plate an eighth of an inch thick no such sensation was experienced.

In all of these experiments I used the "radioscope," an instrument devised by me for this work. It consists of the ordinary fluoroscope, with a sheet of aluminium one twentieth of an inch thick, used in place of the chemical or fluorescent screen; consequently these are not light, but ray effects. I mention this because in *all* of the recorded experiments the operator obtained considerable if not all light effects by using the bare charged tube, alone or in conjunction with the fluoroscope.

From the foregoing I infer that this peculiar sensation depends, as regards its activity, that is, an increase in the number of *Schuppen,* upon the better or less atrophied or otherwise affected retina. That the lenses are not opaque, or rather impervious, is shown by the same phenomena appearing in the normal eye after a lengthy exposure, attended by headache, supra-orbital, and deep-seated pain in the globes of the eyes.

FREDERICK S. KOLLE, M. D.

AN EXPLANATION FROM THE OD CHEMICAL COMPANY.

15 CEDAR STREET, NEW YORK, *January 11, 1897.*

To the Editor of the New York Medical Journal:

SIR: Inasmuch as you saw fit, without seeking any explanation from us, to publish in one of your recent issues a communication purporting to come from Dr. W. B. Ransom, of Nottingham, England, wherein charges were made reflecting upon our honesty and business methods, we request that in justice to ourselves, as well as for Dr. Ransom, you publish in the next issue of your *Journal*, in connection with this letter, the following statement:

"*W. B. Ransom* vs. *Od Chem. Co.*

"Whereas we recently published on page 176 of a pamphlet issued by us entitled *The Witness Box No. 4*, relating to the drug called sanmetto manufactured and sold by us, a testimonial purporting to have been given by Dr. W. B. Ransom, of Nottingham, England. Although we received the testimonial in question on a post card purporting to come from Dr. Ransom, we now find that the same was not sent by him or by his authority and that he has never used the said drug or given any testimonial concerning it.

"We therefore publish this statement and desire to express our sincere regret to Dr. Ransom for having misguidedly made use of his name in this connection and for the inconvenience and annoyance caused him thereby, and we have submitted to an injunction restraining us from further publishing or making use of Dr. Ransom's name in connection with 'sanmetto.'

"Dated this third day of December, 1896.

"OD CHEM. CO."

We receive a great many letters from physicians of Great Britain commending our product, sanmetto, usually written on their stamped personal note sheets. The post card above referred to having all the earmarks of genuineness, even to the minutest circumstance, and with no motive of a forgery apparent, we were naturally not led to question its authenticity at the time of its publication.

OD CHEM. CO.,
M. HOMAN, *Prest.*

Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

Ninth Annual Meeting, held in Richmond, Virginia, on Tuesday, Wednesday, and Thursday, September 22, 23, and 24, 1896.

The President, Dr. JOSEPH PRICE, of Philadelphia, in the Chair.

Pelvic Diseases and their Principal Causes: What should the Laity be Taught concerning Them?—Dr. JOHN M. DUFF, of Pittsburgh, said that notwithstanding the fact that some of the prominent members of the medical profession had, in talks to the galleries, held the gynæcologists up to ridicule and criticised them severely, he did not think any apology was due either the profession or the public for the character or for the results of the work of pelvic surgeons. Those members of the profession who had been devoting themselves to the care of diseases peculiar to women had, in the face of revilings and professional and public prejudice, worked patiently and persistently until they had obtained results of which they might well feel proud, results far beyond what the most sanguine expectations of the hardy pioneers of a quarter of a century ago had led them to hope for. They were to-day charged with irrational radicalism, with an operative mania which was gratified without a proper consideration of the ultimate benefit to the patient. They were urged to adopt more conservative measures, and thus stop the wholesale mutilation which was going on at present, which, it was alleged, was neither scientific nor humane. Sentiments such as these, indorsed by men of reputation, were eagerly taken up by the lay press as sensational news and advertised by pretenders as an indorsement of their methods of practice, and thus the laity, in the opinion of Dr. Duff, were taught false notions regarding the nature of pelvic diseases and their treatment. That there was a great amount of mutilation connected with pelvic surgery he did not deny; but that regular pelvic surgeons were guilty of reckless despoliation was not, he thought, susceptible of proof. Pelvic surgeons could scarcely be held accountable for the work of general practitioners; and for the work of ignorant egotists and pretenders, who with brazen effrontery undertook operations for the performance of which they were not qualified by character, experience, or education, the pelvic surgeons disclaimed all responsibility.

During the period of the evolution and upbuilding of pelvic surgery no doubt much of the work was crude, and perhaps too much was done by overzealous operators. That at this day, through mistaken diagnosis, operations were sometimes needlessly performed, no one would have the hardihood to deny; but that such cases were as frequent as some critics said they were Dr. Duff did not believe. He said the true pelvic surgeon was governed by nobler purposes, by more elevated aims. Conservatism in its true sense—the saving of life, relief from pain, the curing of the patient—was his watchword.

Dr. Duff then dwelt at length upon various pathological conditions which demanded the attention of the pelvic surgeon.

The Deceptive Similarity of Signs and Symptoms of Intra-abdominal Disease, with Cases.—Dr. WALTER B. DORSETT, of St. Louis, thought that, in order to arrive at a conclusion and to form a diagnosis in a given case, be it medical or surgical, the practitioner must exercise care and judgment in the consideration of such signs and symptoms as were presented. Each should be weighed, and mental annotations taken as to their value individually and collectively.

Dr. Dorsett directed attention to the importance of the family and personal history and habits of patients, to the pulse and temperature, the knowledge to be gained by manual examination, the use of analgetics, etc.

Regarding the exploratory incision, it should not be regarded as an evidence of ignorance, but as a legitimate means of diagnosis, and the offhand diagnostician or the surgeon who never made mistakes should be looked upon with, at least, a grain of suspicion. To illustrate his statements, three interesting cases were reported, one of which was given in full:

Mrs. M., aged twenty-eight years, had been married eight years; she had never been pregnant. She had been seen by Dr. Dorsett about a week after having recovered from an attack of malarial fever. The temperature had been 99° F. and the pulse 90; the tongue had been slightly coated, and there had been a tendency toward diarrhœa. She had complained of general abdominal tenderness, and palpation of the abdomen had revealed a slightly more tender spot at McBurney's point; no swelling or tumefaction could be felt. A vaginal examination had revealed a retroversion with fixation, but no tubal enlargement or tenderness could be made out. There had been no vaginal discharge. The diagnosis had been: Gastro-intestinal irritation with chronic inflammation of the pelvic contents. A diarrhœa mixture had been prescribed and the patient had been told that further attendance would probably not be necessary. Four days subsequently the temperature had been 99.8° F. and the pulse 100; abdominal palpation had revealed a distinctly tender spot with some swelling at McBurney's point, with slight swelling. The patient had stated that she had eaten heartily the day before, and had been awakened during the night by cramps at the navel. Bimanual examination had again been resorted to with a negative result. Inflammation of the vermiform appendix in the first stage had been diagnosticated at this visit. Drachm doses of salts had been prescribed, and the patient had been urged to go to the hospital, but she had refused. The next day she had been found sitting in a rocking chair, and aside from slight tenderness over the abdomen, was feeling quite comfortable. The salts had acted freely. Bimanual examination had again given negative results. The temperature had been 99° F. and the pulse 100. The patient had been ordered to bed and advised to keep quiet. She had been regarded as better and thought to be out of danger. On the following day the pain had become more severe and the patient had come to the hospital of her own accord. Upon examination, the right iliac fossa was found to be exceedingly tender and fluctuating. Vaginal examination revealed nothing aside from what had been found at the previous examination. The temperature was 103° and the pulse 130. The diagnosis was that of ruptured appendicular abscess. The patient was anæsthetized and placed upon the table and a section made in the median line. A large sac was found on the right side, filled with fluid blood and clots, and when it was washed out a rent of the posterior layer of the broad ligament was found which communicated with another rent in the Falloppian tube. The appendix was perfectly healthy, and was not disturbed. A thorough washing out of the sac was done, also ligation of the tube with a portion of the broad ligament, and a glass drainage-tube was introduced. Notwithstanding the utmost care, the temperature remained high, the pulse became worse, the abdomen became distended, and the patient died on the third day.

The post-operative diagnosis was that of a ruptured tubal gestation sac without the usual symptoms. There had been no history of shock, no cessation of menstruation, and no nervous symptoms of pregnancy. There had been no passage of decidua, no vaginal discharge of any kind, but in its stead a good history and train of signs and symptoms of inflammatory disease of the appendix.

The Most Potent Causes of Pelvic Inflammation.—Dr RUFUS B. HALL, of Cincinnati, maintained that septic infection following labor or abortion or gonorrhœal infection was the cause in almost every instance. He thought there would always be some cases of septic infection following labor, which were in no wise due to infection from the attendant—injury to small pelvic tumors, etc. The retention of the products of conception in abortion was a very frequent cause. He advised completely emptying the uterus at once after abortion. He believed the most frequent cause to be gonorrhœal infection conveyed to the woman from a latent gonorrhœa in the husband. The more he saw of the ravages of gonorrhœa, the more he was convinced of the fact that the profession was derelict in its duty to its patients in the dissemination of knowledge upon this subject. The teaching of a few years ago that gonorrhœa in the male could be easily and speedily cured by a little balsam of copaiba or oil of sandalwood, with mild astringent injections, and that the patient was well as soon as the purulent discharge ceased, was false doctrine and must be corrected. This must be done by the family physician. Dr. Hall did not stand alone when he said that he had on many occasions been compelled to remove suppurating tubes and ovaries from women who had contracted the disease from husbands who had believed themselves well when they married. He had no hesitation in saying that gonorrhœa was more destructive to women than syphilis, and he believed it was the duty of every physician to impress upon his male patient the fact that he was not well as soon as the urethral discharge disappeared. He was a firm advocate of legislation upon this subject, believing that every man should have a certificate of freedom from syphilis and gonorrhœa from a health officer before he was granted a marriage license.

Dr. J. HENRY CARSTENS, of Detroit, said that when prominent clergymen consulted physicians and asked them to produce abortion on their wives, he became discouraged, and thought it was love's labor lost. Still, the gynæcologist should keep on preaching against the evils attending the production of abortion.

Regarding Dr. Dorsett's paper, the difficulty attending diagnosis in some cases was exceedingly great. The gynæcologist should exhaust his diagnostic resources before resorting to abdominal section. The too frequent opening of the abdomen stimulated incompetents to do likewise, and as a consequence results were disastrous, and eventually reacted on the gynæcologists.

Dr. W. E. B. DAVIS, of Birmingham, Alabama, did not believe that gonorrhœa played so important a part in the production of pelvic inflammation as had been taught. One's conception of cases of pelvic trouble depended largely upon the class of practice he had. The cases met with in dispensary practice were different from those encountered in private work. He believed that fully fifty per cent. of the cases of pelvic inflammation were due to puerperal infection, either at the time of delivery at full term or at premature delivery.

As to tuberculous trouble, more importance was being attached to it as a cause of pelvic inflammation than it deserved. Those who did considerable operative work knew that only a small per cent. of cases had their origin in tuberculosis.

Dr. JAMES MCFADDEN GASTON, of Atlanta, called attention to the prophylactic management of cases of pregnancy prior to the period of confinement. Extreme hygienic precautions might warrant in some instances the use of antiseptic washes prior to labor, but, as there was a great tendency on the part of some members of the profession to resort to measures which were regarded as precautionary in the way of preparing a woman for labor and using washes in advance of confinement, it struck him that this was altogether out of place, inasmuch as there was a normal condition of things, and Nature should be allowed to take her course unless there were ample reasons for interference.

Dr. ERNEST S. LEWIS, of New Orleans, cited a case in connection with errors that sometimes arose in the diagnosis of abdominal tumors. He had operated on a patient last winter for what he supposed at the time was a small ovarian tumor, but after the abdomen had been opened it turned out to be a retroverted gravid uterus.

Dr. F. D. THOMPSON, of Fort Worth, Texas, inquired as to when it was safe for men who had been the subjects of gonorrhœa to marry and have intercourse with their wives. Many cases of gonorrhœa had occurred in married men, and the gynæcologist had before him all the ills and consequences incident to this disease. How long should such men abstain from sexual intercourse? The speaker thought these points should be dealt with more fully and explicitly.

Dr. Lewis S. McMurtry, of Louisville, considered the view enunciated by Dr. Hall as to gonorrhœa and its relations to marriage untenable. Regarding the exploratory incision for diagnostic purposes, a small opening was not always sufficient. The incision should be sufficiently large to enable the surgeon to explore the abdominal cavity thoroughly to detect such pathological conditions as might be present.

Dr. L. H. Dunning, of Indianapolis, cited cases illustrating the impracticability of making a small incision for the detection of intra-abdominal pathological conditions. He favored an exploratory opening sufficiently large to make a thorough search.

Dr. A. H. Cordier, of Kansas City, said, regarding the possibility of making diagnoses in intra-abdominal pathological conditions, that in eighty per cent. of the cases this could be done by painstaking efforts.

Dr. Edwin Ricketts, of Cincinnati, agreed with the previous speakers that it was exceedingly difficult to diagnosticate intra-abdominal lesions previous to opening the abdomen, and sometimes the surgeon did not know the true nature of the growth even after the abdomen was opened. Cases illustrating the great difficulty attending diagnosis of intra-abdominal growths were cited.

Dr. E. F. Fish, of Milwaukee, said that, while he did not believe in promiscuous exploratory laparotomy, he could recall one case in particular in which an exploratory operation had saved the patient's life.

Dr. Richard H. Gibbons, of New York, thought that many of the cases dealt with in the papers had been due to puerperal contamination, or in some instances to laceration of the cervix, as had been pointed out by Emmet. He believed that Nöggerath had given us the keynote to the class of infection produced by gonorrhœa. Relative to diagnosticating intra-abdominal diseases, there was no particular symptom that was pathognomonic. Dr. Gibbons pointed out the unreliability of McBurney's point, of which so much has been said and written, and called attention to an article written by him and published in the *New York Medical Journal.*

Dr. Howard W. Longyear, of Detroit, emphasized the importance of educating the laity in regard to gonorrhœa. He believed the teachers of our public schools should be empowered to impart the necessary knowledge regarding the dangers of this disease and its consequences.

Ovarian Tumors.—Dr. George Ben Johnston, of Richmond, presented the specimen of an ovarian tumor, the first one which had been removed under Listerism in the State of Virginia so far as he had been able to ascertain. The patient had been an unmarried woman, twenty-six years of age. The tumor had been removed on March 19, 1879. The tumor with the sac and fluid contents had weighed thirty-four pounds. The operation had been performed under the spray and with the elaborate dressings recommended by Lister and others. The patient had died, however, from sepsis.

In November of the same year he had been consulted by Mrs. M., whom he presented to the meeting, for what had turned out to be an enormous unilocular ovarian tumor. Her measurements had been six feet and four inches around the abdomen at the umbilicus, and three feet and two inches from the ensiform cartilage to the pubes. The contents of the tumor and the sac had weighed ninety-six pounds. This operation had been performed at the patient's house, with the same care as that of the previous one, and recovery had resulted.

Tubo-ovarian Cysts.—Dr. Albert Goldspohn, of Chicago, read a paper on this subject, in which he said that by tubo-ovarian cyst was meant a non-purulent sac whose walls were composed, in variable proportion, of the walls of the Falloppian tube and those of some cystic ovarian or parovarian formation, with the coalescence of two or more cavities—at least one from each—into one, by a free communication. The fluid contents of such a sac might be serous or hæmorrhagic, or might partake, in variable degree, of the qualities and characteristics of the fluid contained in glandular ovarian cystomata. The fimbriæ of the abdominal ostium of the tube might be distinguished or not upon the inner or the outer side of the ovarian portion of the sac, or they might have coalesced with other structures to form some portion of the walls of the united sac. The ovarian element in this formation could have originated from a dropsical Graafian follicle, a cystic corpus luteum, the primordial glandular ducts of Pflüger in the ovary, or the parovarium. In order to exclude a large number of ordinary tubo-ovarian conglomerates it was necessary to recognize the following minimum requirements in distinguishing a tubo-ovarian cyst: 1. The participation of the tube, which was easy enough from its position and connections. 2. The participation of the ovary, as shown by demonstrating some ovarian tissues in the wall of the sac. 3. Union of their cavities by some opening through which the mucous membrane of the tube was continuous with the lining of the ovarian cyst or follicle. After applying this standard the author had been compelled to exclude a number of patients who had been mentioned as having such cysts, because the three points had not been proved in each of the cases.

The first description of a tubo-ovarian cyst had been given by Blasius in 1834, but the correct name had been proposed by Richard in 1853, who had spoken of *kystes tubo-ovariens* in demonstrating a number of post-mortem specimens. The total number of authenticated cases that the author had been able to find in literature was thirty-eight, by twenty-five different authors. Dr. Goldspohn reported three cases, and called attention to some interesting features in connection with the anatomy as influencing intermittent profluent discharges and showing the inflammatory element in their causation. From a study of specimens, from the results of experience, and from the arguments of the best authors, he deduced the following conclusions: 1. Tubo-ovarian cysts occurred in consequence of a plastic inflammatory union between a Falloppian tube and the adjacent ovary, after either or both of these organs and the intervening peritonæum had experienced a non-purulent pathological change of a cystic character. The sæptum intervening between the two lumina disappeared in consequence of pressure atrophy from the tension of liquid confined to one or both sides of it. 2. This union of a distended tube cavity might occur also with that of a parovarian cyst (von Ott), or with that of a peritoneal pseudo-cyst (Zedel). 3. In those rarer cases in which the fimbriæ were really found floating in the interior of the main cyst cavity, we must assume either the congenital anomaly of an "ovarian tube," as had been seen by Schneidemahl in a mare, as a *vitium primæ formationis*, or that an ovarian cyst or follicle cyst had ruptured, and the abdominal end of the tube had dropped into the rent and been united to its edges by inflammatory action, thus making a joint cyst and tubal cavity.

Mixed Tumors of the Ovary.—Dr. WALTER B. CHASE, of Brooklyn, stated that mixed tumors of the ovary had a peculiar interest, for the reason that, if small, they were often difficult of diagnosis. These tumors of the ovary might be made up of a variety of cysts, or might be a combination of cysts and solid growths. The ætiology of tumors as a whole was a matter of great importance, in relation to both diagnosis and treatment.

The question of what constituted a tumor might be considered with profit. Senn, in his recent classical work on the *Pathology and Surgical Treatment of Tumors*, defined a tumor as "a localized increase of tissue proliferation of embryonic cells of congenital or post-natal origin." An important fact concerning true tumors was that they never disappeared except by removal or destruction. Benign tumors always remained local, while malignant ones were disseminated by migration or transportation of their peculiar cells, and they always originated as benign or malignant growths. If the tumor matrix was made up of embryonic cells of the lowest development, there was greater liability to malignant growth than if it was made up from tissues susceptible of the highest physiological type of development.

Retention cysts of the ovary were not tumors in a technical sense, and they never attained a large size. Large ovarian cysts were most often cystadenomata and were not developed from Graafian follicles, but arose from the embryonic structure.

It would seem from what had been said that the genesis of simple and mixed tumors was divested of much that had been misleading and contradictory and reduced to a rational basis. It had also been demonstrated with great clearness that tumors were not only of local origin, but at their inception were congenital.

The case reported, in which an operation had been done by the author at St. John's Hospital, on August 4, 1894, as reported by Dr. H. P. De Forest, pathologist to the Methodist Episcopal Hospital, had been that of a mixed tumor of the left ovary, consisting of a large cystadenoma, containing about two gallons of clear straw-colored fluid, a dermoid intimately united with the cystadenoma, containing less than a quart of fluid, having true bony plates in its wall, and numerous encysted papillomata within the walls of both cysts.

(To be continued.)

Book Notices.

The Sequels of Disease. Being the Lumleian Lectures delivered in the Royal College of Physicians, 1896, together with Observations on Prognosis in Disease. By Sir DYCE DUCKWORTH, M. D., LL. D., Fellow and Treasurer of the Royal College of Physicians, etc. London, New York, and Bombay: Longmans, Green, & Co., 1896. Pp. x–227.

THE author states that he was led to take up this subject by the remark of Dr. William Baly to Sir James Paget, some thirty-five years ago, that in his opinion one of the most useful books that might be written would be one on the diseases of convalescence. Accordingly, the material for the lectures was obtained, and the book has been published for the purpose of specific reference as far as our incomplete knowledge of the subject will allow.

After referring to the difficulty of determining and defining what constitutes a true sequel in the case of any disease, a difficulty that increases as modern research throws more light upon ætiology, the author mentions some of the early writers who described sequels of disease, refers to the necessity of learning what conditions of the tissues dispose to and determine latency—whether of germ, toxine, or other morbific agent—considers the occurrence of new morbid conditions that appear to be determined by the previous incidence of definite disease, and then enters upon the consideration of the specific contagious diseases. These and the sequelæ of pulmonary, cardiac, and cutaneous diseases are considered in detail that shows extensive clinical experience and profound research. As a final deduction from this investigation, the author concludes that it is of supreme importance to regard the patient, rather than his disease, in all therapeutic management.

To the lectures is appended an address on the prognosis of disease, which was delivered before the British Medical Association last summer. We would commend the author's statement that "the most accurate prognosis comes from him who has with care and a large chastened experience first established a correct diagnosis, and has also learned to employ remedial measures with judgment and good sense."

The volume is a useful and suggestive work, and its perusal is likely to augment the practitioner's breadth of view.

Two Health-seekers in Southern California. By WILLIAM A. EDWARDS, M. D., Fellow of the College of Physicians of Philadelphia, etc., and BEATRICE HARRADEN, author of *Ships that Pass in the Night*, etc. Philadelphia: J. B. Lippincott Company, 1897. Pp. 5 to 144. [Price, $1.]

AT a time when the inclemency of season suggests to the invalid and the valetudinarian the desirability of an exodus in quest of some more genial climate than is to be found in most of our Eastern, Central, and Western States, such a work as this, which gives reliable information in regard to Southern California, is an opportune publication. The glamour that encompasses one's impressions of that country is too often the reflection of the roseate descriptions of chance travelers, as well as a result of the enchantment of view that pertains to a distant locality.

In the preface, Dr. Edwards refers to three facts that have caused disappointment to the visitor to Southern California: first, that no climate is perfect; second that a patient will too often remain at home until malady has gained a firm foothold in the constitution and, third, that the region is in the arid belt of th United States, where there is scant and uncertain rainfall and barrenness by necessity.

Miss Harraden, in an entertaining chapter, says tha "Southern California has to be known well before i can be loved, and even when thoroughly appreciate for its many delightful characteristics there will ofte remain certain of its peculiarities which may perchanc jar on the sensitiveness of those accustomed to the tender charms of a more caressing land." She refers t the flora and fauna of the region, and to those localities that resemble the resorts of the Mediterranean.

Dr. Edwards's chapter on the climatology of that part of the State is a terse and frank exposition of the variety of climate that may be obtained. Where the average of sunshine is so high it might be surmised that the summers would be disagreeable, but on the coast the days are characterized by a constant sea breeze, the nights are always cool, and the temperature averages 75° F., while there is an absence of humidity. In a subsequent chapter the author advises that the health-seeker should go to California in April or May, after the rains are over, because the summer climate on the Pacific coast is pleasanter than that of any Atlantic coast resort—a fact that the reviewer willingly testifies to.

Another matter the author emphasizes is that this is not the country for a poor invalid. All vocations are overfilled, remunerative occupation is not easily obtained, the cost of living is high, and these facts require that the immigrant should possess money.

The chapters on tuberculosis, on the class of invalids benefited by the climate, and on those who are not improved by it are admirably suited to the lay reader.

The authors have produced a work that will be appreciated by all who desire to learn the facts in regard to the selection of a health resort.

Prize Essays on Leprosy. NEWMAN, EHLERS, IMPEY. London: The New Sydenham Society, 1895. Pp. 7 to 227.

THE first of these essays is by George Newman, M. D., *On the History of the Decline and Final Extinction of Leprosy as an Endemic Disease in the British Islands.* In it the writer gives most interestingly and in some detail the progressive history of leprosy in the British Islands from the earliest times to the present day. "The earliest date," he says, "that we have any knowledge of leprosy being '*brought to England*' was in the year 60 B. C., though it probably occurred much earlier." From this on he traces it with an immense amount of research through its zenith as an endemic disease in the thirteenth century to its decline and final extinction in the eighteenth. It is a very complete and instructive exposition of the subject, and the logic with which the deductions are drawn is convincing. Among these it is of interest to note, in view of the present amount of discussion upon the subject, the statement that, "the disease being neither *contagious* nor hereditary, has, under *favorable hygienic circumstances,* a tendency to die out."

The second essay is by Edward Ehlers, M. D., of Copenhagen, and the title is *On the Condition under which Leprosy has declined in Iceland and the Extent of its Former and Present Prevalence.* He goes interestingly into the legends of the country, in which the disease is declared by some to have been mentioned, but fixes the period of introduction with greatest probability at the end of the twelfth century. He gives a vivid description in his Personal Researches in Iceland of a "Badstofa," or common sleeping-room, in which from thirteen to fourteen people sleep. Speaking of it, he says: "In this dirt a confused mixture of cats, dogs, and children lie reeking on the floor, exchanging caresses and echinococci." "I shall never," he continues, "succeed in picturing all the details of such an interior; one must have seen and smelt it all to be able to understand that the leprous disease is due neither to the rancid butter nor to the dry fish. It is neither one nor the other, but the whole *ensemble:* it is the absolute want of cleanliness, plus the Hansen's bacillus, which in such an interior finds its true paradise."

The third essay is by S. P. Impey, M. D., *On Leprosy in South Africa,* and most of the facts brought out are to be found in his recent *Handbook on Leprosy* which has already been noted in these columns.

Nouveaux éléments d'ophthalmologie. Par H. TRUC, professeur de clinique ophthalmologique à la Faculté de Montpellier, et E. VALUDE, médecin de la clinique ophthalmologique nationale des Quinze-Vingts. Tome second. Avec 108 figures. Paris: A. Maloine, 1896. Pp. 713.

THE second volume of this work does not add to the favorable impression received from the first. The book is attractive because it introduces new features of some interest which are not found in most other works on ophthalmology; for instance, a chapter on hygiene contains suggestions as to the illumination of school rooms, the hours for work, the typography of school books, and the methods of writing which are of considerable value and the knowledge of which should not be confined to the oculist. A brief chapter on legal medicine deals in general terms with some of the important questions which may arise in this field. More attention is given to the history of ophthalmology than is usual, although this specialty has always been more favored in that respect than others, a fact which contributes largely to its dignity.

In the purely clinical portions of the book the descriptions of diseases vary considerably in value; in some cases important subjects are treated inadequately, the types of disease lack definition, and the reader is left without a clear idea of the course or indications for treatment. There are occasional statements that lack precision, such as that regarding the Argyll-Robertson pupil, on page 73, and the paragraph devoted to the treatment of sympathetic ophthalmia. It is surprising to notice that Darier is credited with the introduction of autophakoscopy, a method known before Listing and Donders wrote of it.

The illustrations are extremely diagrammatic, and the appearance of the book in general is not especially attractive.

The Principles of Theoretical Chemistry, with Special Reference to the Constitution of Chemical Compounds. By IRA REMSEN, Professor of Chemistry in the Johns Hopkins University. Fifth Edition. Thoroughly revised. Philadelphia and New York: Lea Brothers & Co., 1896. Pp. x–13 to 326. [Price, $2.]

IN the preface to this edition of his work Professor Remsen writes: "In preparing this new edition, I have again been tempted to change the book fundamentally, and to give it a character more in keeping with the recent tendencies in the field of physical or general chemistry. But, taking everything into consideration, I have concluded to resist the temptation, and remain true to the original title and character of the book. Accordingly, it is essentially what it has been—a brief treatise on those facts and speculations that have to deal especially with the problem of the constitution of chemical compounds."

It should be a matter of congratulation, both to the author and to us all, that his determination has been the one stated, for, notwithstanding our confidence in his ability to make valuable whatever work he sees fit to write on the subject, we nevertheless prefer that it should not be written if that involves the disappearance of the book which is now presented in its fifth edition. This book has long been one of the most useful to students of chemistry, and that it remains—with all necessary modernization—"essentially what it has been" is, to our mind, sufficient in recommendation and in praise.

Ophthalmic Operations as Practised on Animals' Eyes. By CLARENCE A. VEASEY, A. M., M. D., Adjunct Professor of Diseases of the Eye, Philadelphia Polyclinic, etc. With Fifty-six Illustrations. Philadelphia: The Edwards & Docker Company, 1896. Pp. viii–9 to 99.

THIS little book may be of considerable service to those who are deprived of clinical instruction. It is clearly written and well illustrated. Attention is very properly called to the necessity of observing the same routine that would be necessary in actual practice.

Two statements should be corrected in a future edition. The capsule forceps removes the portion of the capsule seized in its teeth, so that it is not necessary to draw it out and excise it with the scissors, as described on page 54. The Vienna method of enucleation is not given as practised by Arlt, and the operation would lead to a serious sacrifice of conjunctiva if carried out as here described.

The typography and general appearance of the book are excellent.

Ptomaines, Leucomaines, Toxines, and Antitoxines, or the Chemical Factors in the Causation of Disease. By VICTOR C. VAUGHAN, Ph. D., M. D., Professor of Hygiene and Physiological Chemistry in the University of Michigan, etc., and FREDERICK G. NOVY, Sc. D., M. D., Junior Professor of Hygiene and Physiological Chemistry in the University of Michigan. Third Edition, revised and enlarged. Philadelphia and New York: Lea Brothers & Co., 1896. Pp. xii–13 to 604. [Price, $3.]

THE third edition of this well-known work presents the valuable features of its immediate predecessor, together with what has been added to our knowledge of the subject within the last five years. That it constitutes, therefore, a work of the greatest value is not to be questioned, and, though the field it covers is one in which a vast amount of work still remains to be done, its contents are not from that fact the less complete, so far as completeness is attainable at present.

To commend this work is unnecessary; it has too well commended itself, but we anticipate for it as great a usefulness in the future as it has had in the past, and we look for a sequence of later editions which shall mark the advances in so important a field of investigation.

BOOKS, ETC., RECEIVED.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, member of the Academy of Medicine, etc.; Fournier, Professor of the Faculty of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Leon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1896. Part VI. Pp. 139 to 156. [Price, $3 each part.]

Anomalies and Curiosities of Medicine. Being an Encyclopædic Collection of Rare and Extraordinary Cases, and of the most Striking Instances of Abnormality in all Branches of Medicine and Surgery, derived from an Exhaustive Research of Medical Literature from its Origin to the Present Day, Abstracted, Classified, Annotated, and Indexed. By George M. Gould, A. M., M. D., and Walter L. Pyle, A. M., M. D. With Two Hundred and Ninety-five Illustrations in the Text, and Twelve Half-tone and Colored Plates. Philadelphia: W. B. Saunders, 1897. Pp. 968. [Price, $6.]

A Treatise on the Surgery of the Alimentary Canal, comprising the Œsophagus, the Stomach, the Small and Large Intestines, and the Rectum. By A. Ernest Maylard, M. B., B. S. Lond., Surgeon to the Victoria Infirmary, Glasgow, etc. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. xxiv–724. [Price, $7.50.]

The Diseases of Infancy and Childhood. For the Use of Students and Practitioners of Medicine. By L. Emmett Holt, Professor of Diseases of Children in the New York Polyclinic, etc. With Two Hundred and Four Illustrations, including Seven Colored Plates. New York: D. Appleton & Company, 1897. Pp. xvii–1117 [Price, $6.]

Leprosy and the Charity of the Church. By Rev. L W. Mulhane. Chicago and New York: D. H. McBrid & Co., 1896. Pp. 13 to 155. [Price, 75 cents.]

The Medical Environment. Two Addresses: Th Hospital Question—Medical Ethics. By D. Campbel Black, M. D., L. R. C. S. Edin., F. R. S. Edin., F. F. P S. G., Professor of Physiology in Anderson's Colleg Medical School, etc. Glasgow: Hugh Hopkins. Halifax George R. Riley, 1896. Pp. 5 to 50.

La foi qui guérit. Par J.-M. Charcot, membre d l'Institut, etc. Paris: Félix Alcan, 1897. Pp. 38. [Prix 2 *fr.*]

Report of America's Relief Expedition to Asia Mino under the Red Cross. Washington, D. C.

An Initial Report from the Neurological Laborator of the Philadelphia Polyclinic. [Reprinted from th *Journal of Nervous and Mental Diseases.*]

Miscellany.

Deformity Treated by Bone Marrow.—In the *India Medical Record* for December 1st Dr. Thomas Moff Allison gives an account of the results he obtained wit bone marrow in the following cases: The first case w an extreme example of osteomalacia in an unmarrie woman, forty-four years old. The disease began puberty and lasted thirty years, spreading upward fro the knees until almost every bone below the eyebro ecame affected. Photographs taken on June 5, 1895, howed a pain-racked skeleton, almost entirely de-ormed, without teeth and without the use of three limbs, he affected joints being fixed and the legs rigidly crossed. he adipose and muscular systems had vanished, and oth ulnas were affected with green-stick fractures.

Red-marrow treatment was begun on May 27, 1895; rom five to fifteen grains was given three times daily. mprovement was immediate, a feeling of warmth was ex-erienced by the patient after taking the second dose, and a few days a change for the better was visible. The ones began to strengthen and rotate into place, the igid joints "going off in audible cracks," and the pain radually faded away.

Twelve months after the treatment was begun there as great improvement in the patient's appearance. he spinal and pelvic deformities were greatly reduced, nd movement and muscular development returned. he patient was now able to stand and could walk from er bed to a chair unaided, although she had not walked r twenty years.

In this case, says the author, the marrow treatment ad a specific effect. There was no history of pregnancy, ut ovarian activity was always marked, and the marrow used a still greater activity, increasing the menstrual ow; hence, he says, the theory that overexertion of the terine organs causes the disease will hardly hold good. he author is inclined to think the strain of puberty or regnancy falls on the weakest tissue, which, in persons redisposed to the disease, seems to be the medullary ntents of the bones, and that the bone salts are affected condarily. At any rate, there is a disturbance of the lance normally existing between osteoblast and osteo- ast, an equilibrium seen in the ossification and ab- rption of callus in the repair of an ordinary fracture. ut whatever the pathology, the effects of the treat- ent were very striking, and the author ventured with ore or less success to try it in commoner forms of bone d joint deformity.

The second case was that of a young girl with a his- ry of pleurisy. On November 30, 1895, the right est measured an inch and a half more than the left. he marrow treatment was then begun, and on Dc- mber 24th the right chest measured an inch more an the left; a gain of half an inch on the left side. n January 16, 1896, both sides measured half an inch ore, and on February 6th the left chest showed a gain three eighths of an inch, and the treatment was dis- ntinued.

In a case of angular curvature of the spine in a young rl, during the first two months of the treatment the neral health improved greatly; the anæmia disap- ared and menstruation became normally established. e patient gained an inch in height in six months, and r weight increased four pounds. The curvature did t diminish, but the irregularities became somewhat ed down.

In a case of rheumatoid arthritis in which the hands re typical, with symmetrical spindle-shaped joints and ar deviation, the pain, creaking, and deformity were ikingly reduced by this treatment.

Good results have been obtained in rickets also, and author thinks there is a wide field of therapeutic use- lness for bone marrow. He hopes that the examples ed will lead others to give the remedy an unbiased al. He states that he has avoided mechanical aids far as possible, in order to test the effects of mar- v alone, but by combining the two, he thinks, especially in the beginning, there is hops, at any rate, of alleviation for the cripple and the deformed.

The Suture of Arterial Wounds.—The question of the treatment of arterial wounds by suture is, says a writer in the *Journal des praticiens* for December 19th, of the greatest importance, and investigations in this direction should be carried on. In 1895, Gluck, he says, reported to the Medical Society of Berlin a resort to suture of the arterial wall in a case of arterio-venous aneurysm, and in 1896 he made a statement to the same society in which he said that the question had been considered from an experimental point of view, and that he had demonstrated that arterial suture did not give rise to secondary traumatic aneurysm or to the formation of clots when it was done under sufficiently antiseptic conditions.

The writer states that the following case, which came under Heidenhain's observation (*Centralblatt für Chirurgie*, 1895), seems to authorize the future employment of arterial suture: The axillary artery, in this case, had been injured during an operation for carcinoma of the breast. The edges of the small wound were grasped with hæmostatic forceps, and a continuous catgut suture, similar to intestinal sutures, was practised. The wound was tamponed and left open for twenty-four hours until all danger from secondary hæmorrhage had disappeared. The patient recovered completely, and when the writer examined her, six months later, there was no trace of traumatic aneurysm.

He recommends the use of catgut and the union of endothelium with endothelium. A little oozing, he says, may be observed through the points of suture, but slight pressure for a few minutes is sufficient to arrest it.

A New Method for the Prevention of Thumb-sucking in Children.—In the *Boston Medical and Surgical Journal* for December 31st Dr. G. H. Monks, of Boston, states that he was lately asked to devise some means by which a child of about five years of age could be cured of the habit of sucking her thumbs—a habit which had persisted for two years or more, in spite of all efforts to cure it. The ordinary methods, such as applying bitter substances to the thumbs, wrapping up the hands or thumbs, tying the arms to the sides, etc., had been tried without effect. The little girl was desirous of breaking herself of the habit; but apparently, when she was tired or sleepy, she could not control herself, and one thumb or the other would go into her mouth. The teeth of the upper jaw were becoming somewhat prominent as the result of the habit. On thinking the mattter over, says Dr. Monks, it seemed to him that some method would have to be devised which would make it physically impossible for the child to get the thumb anywhere near the mouth.

He thought he could best accomplish this by immobilizing the elbows at a very obtuse angle, and he therefore applied a silicate-of-potassium bandage to each arm, reaching nearly from shoulder to wrist. After the bandages had hardened, they were split at the sides and removed. They were then carefully covered and lined with cotton flannel, the ends of the flannel being left long enough so as to project well beyond the upper and lower ends of the silicate bandages. The flannel was then stitched in such a manner that it would not shift its position. These two long tubular bandages could then, like gauntlets, be pulled on and off, as the parents wished.

In about two weeks, the father stated that the experiment had been so successful that the habit was completely broken, and that the child showed no further inclination to put its thumbs into its mouth. The immediate and complete success of the expedient seems, Dr. Monks thinks, to justify a publication of the case.

Exophthalmic Goitre and Complete Alopecia.—The *Indépendance médicale* for December 23d contains an abstract of an article from the *Monatshefte für praktische Dermatologie*, vol. xxiii, No. 2, in which the author, Dr. Berliner, relates the following case, which, he thinks, is of interest because of the complete alopecia which was associated with exophthalmic goître. The patient was a man thirty years old, who stated that when he was a boy he had been very much frightened by a fire which he had helped to put out. During that time he had been in a profuse perspiration, and his clothes were wet. In this condition he had returned to his home, which was about an hour's walk from the scene of the fire. On the following day he was very tired, but his parents insisted that he should go to his work as usual. From this time he often complained of being easily fatigued, of having palpitation of the heart, and of agitation. Several weeks afterward he noticed a bald spot on the back of his head, and later on a similar spot on the nape of the neck. Six months afterward there was no hair on the head or on the body. A goître developed, but the patient was not able to state the exact date of its appearance. He remembered only that at this period there had often been a violent trembling, which is an uncommon symptom of exophthalmic goître; abnormal heart beats had also been ascertained.

Some time after this the patient, who had overslept himself, ran to his work in order not to be late, and when he reached the place he was so exhausted that he had to be carried back to his home, where he remained for two years without being able to work. Since then his condition had gradually become ameliorated.

The Northern Tri-State Medical Association of Indiana, Michigan, and Ohio.—The next annual meeting will be held in Fort Wayne, Indiana, on Tuesday, January 19th. The programme includes the following titles: A Report of Surgical Cases, by Dr. W. D. Hamilton, of Columbus, Ohio; The Chromescope—a New Instrument Useful as a Ready Test of Color Perception, by Dr. L. E. Maire, of Detroit; Some of the Diseases of the Lacrymal Apparatus, by Dr. A. E. Bulson, of Jackson, Michigan; Ocular Manifestations of Syphilis, by Dr. Kent K. Wheelock, of Fort Wayne, Indiana; The Diagnosis of Syphilis, by Dr. Carl Proegler, of Fort Wayne, Indiana; Ectopic Gestation, with Retained Fœtus, etc., by Dr. L. H. Dunning, of Indianapolis; Errors of Refraction as an Ætiological Factor in the Production of Blepharitis Marginalis, by Dr. A. E. Bulson, of Fort Wayne, Indiana; Posterior Deviations of the Uterus, by Dr. J. H. Carstens, of Detroit; Some Thoughts on the Treatment of Incipient Phthisis, by Dr. Bud Van Sweringer, of Fort Wayne, Indiana; A Year's Acquaintance with Appendicitis, by Dr. H. O. Walker, of Detroit; The Radical Cure of Hernia—An Improved Method, by Dr. Hal C. Wyman, of Detroit; The Doctor as a Witness, by Dr. D. C. Chapman, of Toledo; The Surgical Treatment of Senile Gangrene, by Dr. E. B. Harrison, of Napoleon, Ohio; Some Suggestions on the Treatment of the Heart, by Dr. W. E. Dickey, of Tiffin, Ohio; and The Bacteriology of Vaginal Secretions, by Dr. C. N. Smith, of Toledo.

Other papers, the titles of which are to be announced, will be read by Dr. W. H. Myers, of Fort Wayne, Indiana, Dr. D. W. Fenton, of Reading, Michigan, Dr. Hausencamp, of Toledo, and Dr. Curran Pope, of Louisville.

The Relation of Sarcoma to Inflammation.—The *Nord médical* for December 15th publishes a review of a thesis by Dr. Méplaux in which the author endeavors to show that sarcoma is an inflammatory product caused by an unknown infectious parasitic agent. He bases this theory on the evolution and the clinical characteristics of melanotic sarcoma, of sarcoma with myeloplaxes, and of cutaneous sarcoma. He refers to the structure of tuberculous and syphilitic productions which resemble sarcoma, and he recalls the investigations of Dibbet, Cazer, and Moty.

Unfortunately, says the writer, no indisputable fact has been brought forward to demonstrate the parasitic nature of sarcoma. It is the same concerning the pathological anatomy; notwithstanding all the resemblance that sarcoma may have to an inflammatory product, two such different processes can not be reasonably compared. To the author's reasoning, says the writer, it can only be answered that a histologist will always recognize a distinctly characterized sarcoma, and a clinician will rarely be deceived as to the nature of a well-marked sarcomatous tumor, and no theoretical consideration could lead to the comparison of sarcoma to an inflammatory product.

However, it is true that the parasitic nature of sarcoma has shown that the species does not cease to exist on account of that. A tuberculous product, although the recognized cause may be a bacillus, is none the less a tuberculous tumor.

Moreover, continues the writer, aside from theoretical considerations, no fact is found in this thesis to warrant the author in comparing sarcoma to an inflammatory product. The three personal observations mentioned by him concern inflammatory tumors which resulted from a puncture or the presence of a foreign body. The writer adds that he can not really see what relation can be established between this kind of production and sarcoma.

A Means of Curing and Preventing the Growth of the Hump in Pott's disease.—At a recent meeting of the Académie de médecine, a report of which appears in the *Presse médicale* for December 23d, M. Calot presented two modes of treatment, one for correcting the hump, and the other for the prevention of its formation.

The author has operated in thirty-seven cases, and the results show that, contrary to professional opinion, the operation can be done without danger of death o risk of complications, and that the deformity can be entirely effaced or corrected in a very great degree.

It was only in exceptionally rebellious cases that bloody operation was necessary. It was a delicate on and consisted in raising the posterior bony wedge whic prevented the spinal column from being straightened.

After a bony wedge was raised behind the spina cord, the imperfectly united bony column situated i front was cut, in order to divide it into segments whic were made to pivot one upon the other until the spina column was straight. At this moment the hump becam effaced.

M. Calot stated that he had performed this cuneiform resection of the spinal column successfully in tw cases. In the thirty-five others he had been able to succeed by simple external manœuvres, preceded or not b the removal of the prominent spinous processes. Th object was to bring the spinal column, by bending from behind, to its normal position. This deflection was obtained by means of traction of the two upper and lower extremities of the spinal column; at the same time powerful pressure was exercised directly on the convex point, on the hump. Very soon the two segments of the spinal column would become disengaged and completely restored, and the hump would disappear. In order to maintain this correction in its integrity, before the patient awakened from the anæsthetic, the surgeon should apply a plaster apparatus which fitted the entire body closely from the head to the pelvis. In a few minutes the plaster would dry, and then the parts could not become displaced. The treatment lasted from five to ten months.

This treatment preserved the integrity of the respiratory and digestive functions, as well as the general health of the child. It prevented, to a great degree, symptoms of paralysis which was produced with, or in spite of, the older modes of treatment. M. Calot stated that in the thirty-seven patients thus treated he had not observed a single case of paralysis.

Picric Acid as a Therapeutic Agent, especially in the Treatment of Certain Inflammatory Skin Affections.—In the *British Medical Journal* for December 26th, Mr. William Maclennan says that the admirable results which he has seen follow the free application of picric acid in solution to painful and extensive burns led him o try its effects in the treatment of certain skin diseases. He states that he has employed it locally in a arge number of cases, and has found it more efficacious han any other of the remedial agents commonly in use, and he thinks it worthy of a more extensive trial.

Acute eczema, he says, is rapidly relieved under the nfluence of picric acid, and, owing to the powerful astringent properties which this chemical possesses, it orms, when applied over a discharging or denuded surface, a protective layer of coagulated albumin and epihelial *débris*, under which healing rapidly proceeds; and as a potent antiseptic, by inhibiting the action of he microbes on which the formation of pus depends, or destroying them, it completely prevents suppuration.

Applied as a pigment with a brush or piece of aborbent wool, even to an extensive surface, it is quite ree from danger, and causes not the slightest pain, howver vascular the surface may be. Almost immediately tching and smarting abate, and in a few days, when the protective crust is removed or separates, the underlying kin is found to be comparatively dry, free from redness, nd covered with a young epidermis.

Mr. Maclennan states that in that very troublesome orm of acute eczema occurring in children (eczema apitis et faciale) which is usually so intractable to the rdinary methods of treatment, he has had most enouraging results from the use of picric acid. If the air on the child's head happens to be long it should be ropped short, and all adherent crusts removed by means f poulticing. The raw surface should then be freely ainted over, morning and evening, for three or four ays in succession with a saturated watery solution. During this treatment the scalp and the face, when it is nvolved, should be protected by means of a calico mask. After the lapse of a few days, the pellicle which has een formed by the action of the picric acid can be removed with some emollient if it has not previously eparated, and, if any undue redness or moisture remains, fresh application may be made. The cessation of rritation permits the child to sleep, and its general health soon improves. When the disease becomes quiescent, the local treatment can be combined with, or followed by, the internal administration of alteratives like arsenic or gray powder.

Although picric acid is so specially valuable in acute discharging eczemas, says the author, it will be found an efficient remedy in almost any superficial inflammatory affection. Thus in three cases of erysipelas he has found a saturated solution of picric acid superior to any local remedy he has hitherto tried. It arrested the inflammation and prevented the disease from spreading, and much more rapidly diminished local discomfort than carbolic-acid dusting powder or ichthyol.

Concerning the internal use of this remedy, Mr. Maclennan says that the drug very rapidly causes yellow discoloration of the skin and conjunctivæ, which can not be distinguished from that of jaundice. It is not due, he adds, to any interference with the hepatic function, but to staining of the blood serum by the picric acid, which is a powerful dye. The stools and the urine are free from bile, and no unpleasant symptoms are experienced. The icteric coloration is first noticed after from fifteen to twenty grains have been given, and it disappears shortly after the use of the drug is discontinued.

Aspland, he says, narrates the case of a soldier suffering from diabetes mellitus, who contracted ague. He was treated with picric acid. Under its influence the polyuria rapidly disappeared, and the specific gravity fell from 1.032 to 1.018, and in a few weeks sugar was entirely absent from the urine.

Lastly, in all those very troublesome cases of chronic simple diarrhœa, and so-called putrid diarrhœa, with very offensive stools, Mr. Maclennan states that he has largely employed picric acid. Often, when opiates and other astringents have failed, picric acid in grain doses has given rapid relief. The powerful astringent and antiseptic properties of picric acid diminish secretion and disinfect the intestinal canal. In this respect the action of carbazotic acid resembles that of carbolic acid, to which it is constitutionally related.

Thus, continues the author, carbazotic acid is a harmless topical agent. Although it is so nearly akin to carbolic acid, no apprehension need be entertained as to its absorption, even when applied to extensive surfaces. Like nitric acid, it limits its own action by coagulating the albumin of the tissues to which it is applied. As heat readily decomposes the acid, accidental stains may be removed from the underclothing by boiling. If the acid is employed internally, the patient should be warned of the discoloration which commonly follows, and it should be given to children in very small and tentative doses, as large doses are not well borne.

Fracture of the Penis.—Weissblatt (*Medycyna*, 1896, No. 4; *Deutsche Medizinal-Zeitung*, December 24, 1896) relates the case of a man, twenty-seven years old, who, while very drunk, seized his penis with both hands while it was in a state of full erection, and, for some reason which he himself could not explain, bent it violently downward. The severe pain that ensued sobered the man, and the next morning he presented himself for treatment, having in the mean time succeeded in reducing the pain and sense of distention by bathing the member with cold water. The organ was found to be enormously swollen and to have a peculiar coloration. It was four inches and a half long and five inches and a half thick. The skin of it, except over the glans, was moderately tumid and of a dusky violet color. On its upper aspect, on the left side, there was a thickening which, though insignificant in extent, was moderately painful. This was taken to indicate the site of a laceration of the corpus cavernosum of that side. The patient was put to bed, and cold lead-water was applied on compresses. In a few days the man was well enough to resume his usual occupation. In fourteen days the skin had regained its normal hue, but the thickening remained almost unchanged. In six weeks the man was able to indulge in coitus without any considerable pain, although there was still a lump as large as a pea in his penis.

Vaginal Seborrhœa.—It is stated in the *Wiener medizinische Blätter* for December 24th that a writer in the *Allgemeine medizinische Central-Zeitung*, whose name is not mentioned, describes under this name what he considers to be a special form of vaginal catarrh which occurs commonly in corpulent women, old maids, and pregnant women. It consists in an excessive augmentation of the normal secretion of the vagina, and the secretion is made up chiefly of whitish fatlike lumps containing numerous pavement epithelia. The secretion soon disappears under the use of injections of warm water containing a little sodium bicarbonate.

Attenuated Test Cultures as a Safeguard against Pseudo-reactions in the Serum Diagnosis of Typhoid Fever by the Dried-Blood Method.—We have received a copy of the following communication, dated Montreal, January 7, 1897:

"*To the President of the Board of Health of the Province Quebec.*

"SIR: In my work in serum diagnosis done jointly with Dr. D. D. MacTaggart, we recently met with a series of peculiar partial reactions in which the dried-blood solution from many perfectly healthy persons gave a very decided agglutination. The blood serum from the same persons was found much less liable to give these pseudo-reactions. This made it less easy to exclude other febrile diseases, and, as with this test accuracy in the negative diagnosis is of great practical importance, others who may meet with similar pseudo-reactions will be interested in learning how they may be avoided.

"These pseudo-reactions were not encountered in our earlier cases, when attenuated cultures were used. They began to appear when we employed a short time virulent cultures, and disappeared again on resuming the use of attenuated ones. Active, virulent cultures intensified by daily transplantation and growth at the body temperature are therefore not suitable for the dried-blood test. Where only active cultures are employed, we do not think that the dried-blood method can be considered to have had a fair trial.

"The explanation of this difference appears to be that the serum contains relatively less of the substances causing agglutination than solution of the entire blood. Hence solutions of the entire blood react more intensely to the test than solutions of the blood serum alone. This was the reverse of what we had anticipated.

"It is found that old laboratory stock cultures kept at room temperature and transplanted at intervals of about one month give us the best result. Bouillon test cultures grown from this stock for twelve to twenty-four hours at body temperature are found to react decisively with solutions of typhoid blood or typhoid serum, the reaction being as a rule well marked within fifteen minutes. With non-typhoid blood or serum solutions, the same test cultures give no reaction even after twenty-four or forty-eight hours' contact. Intraperitoneal injection of one cubic centimetre of such living bouillon culture produces in guinea-pigs a marked blood reaction and immunity without much disturbance of health. We find that the best results in cases of dried blood are obtained with cultures where the motion as seen under the microscope is of a rapid gliding character, but free from darting movements. If the movement is sluggish, owing to too great attenuation of the culture, a few daily transplantations at body temperature will make it more active. Exact estimation of the degree of dilution has not been found necessary for ordinary diagnostic work when attenuated cultures are used. A very faint tint in the drop examined usually indicates sufficient strength. The solution should not be thick and viscid.

"All the results which I have reported (*New York Medical Journal*, October 31, 1896, and *British Medical Journal*, December 5, 1896) were obtained with attenuated cultures. A report giving some additional technical details has been prepared and can be sent to any who desire further information.

"I remain, yours respectfully,
"WYATT JOHNSTON,
"*Bacteriologist to the Board of Health, Province Quebec.*"

Intramuscular Injections of Mercury Benzoate in the Treatment of Syphilis.—The *Gazette hebdomadaire de médecine et de chirurgie* for December 24th publishes a report of a recent meeting of the Société de thérapeutique at which M. Paul Gallois stated that he had practised these injections in twenty cases during the year. He related the histories of three, of which the following case is an example: The patient was a man, forty-four years old, who had rather extensive purpura of the legs and considerable albuminuria. A diagnosis of nephritis due to influenza was given, and the patient was put on a milk diet. Gradually the purpura disappeared and the albumin diminished in quantity; but nocturnal headache supervened, accompanied by pain in the limbs, and M. Gallois concluded that he had a case of syphilis to deal with.

Notwithstanding the slight albuminuria, he made injections of a solution of the benzoate, using a syringeful a day. Three or four days afterward the patient complained of a paralyzed sensation in his right hand; the leg, too, was weak, and he found great difficulty in turning in bed; there was much trouble also in pronouncing his words. M. Gallois then made two injections a day, and in a few days he noticed a very considerable amelioration. Speech became clear and the leg recovered its mobility; the arm, however, did not recover so readily, and remained slightly paralyzed. The pain disappeared progressively. The two injections a day were not continued for a very long time, as the patient complained of a slight stomatitis, and he had, moreover, bad teeth. At the end of twenty-six days the injections were stopped and the patient was given potassium iodide; soon afterward he went to the country. At the time of the report there was only a slight weakness of the right middle finger which annoyed the patient when he wished to write.

M. Gallois thought that these observations showed sufficiently the efficacy of the treatment. Although frequently only half of the dose prescribed was used, the curative action showed itself rather rapidly. It would seem, he says, that in this respect the injections of benzoate are preferable to injections of insoluble mercurials.

Original Communications.

LARYNGEAL AND POSTNASAL PHOTOGRAPHY WITH THE AID OF THE ARC LIGHT.*

By THOMAS R. FRENCH, M. D.,
BROOKLYN.

THE application of the sensitive photographic plate in place of the human eye to physiological and pathological studies of the throat and nose opens vast possibilities. We are thus enabled to ascertain with accuracy what before had to be intrusted to the power of perception of the eye. The existence of conditions or matter in this way revealed can not be so clearly reached by any other isual process, and every impression recorded in minutest detail on the sensitive plate is preserved for our tudy. Again, the results thus obtained can be verified t every step, and any statement or scientific truth be-omes valuable only as it admits of verification. This act makes me feel that the art of laryngeal or post-asal photography is worthy of our closest study.

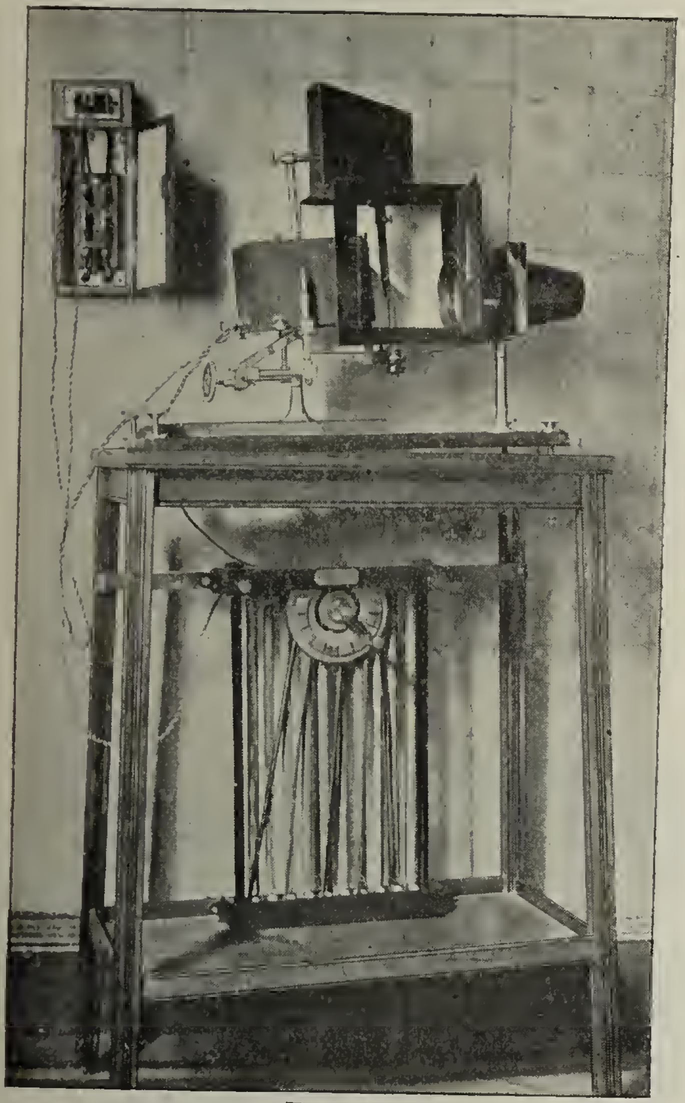

FIG. 1.

How far-reaching the practical results or how great he benefits to be derived from this work we can not now, but having recognized in it the possibilities of a reat power for knowledge, which needs must increase proportion to the opportunities given it, the writer believed that its usefulness ought to be extended, and this, it was apparent, could only be done by simplifying the method of work. With this end in view, an effort was made to overcome some of the disadvantages of the method which I described at the International Medical Congress, held in Copenhagen, in 1884. The principal difficulty with that method was that the source of illumination was sunlight. The necessity of limiting the use of the method to a few hours on days on which the sun shone brightly, added to the varying power of the sun's rays and consequent uncertainty of the success of the exposures, reduced its usefulness to a very considerable extent. During the past few months I have, however, succeeded in adapting the electric arc light to the method. With sunlight as a power of illumination it was necessary to bring the subject to the light. With the new method we can bring the light to the subject, and at any time, day or night, good photographs can be taken. This will undoubtedly enhance the value of laryngeal and postnasal photography, for with it greater opportunities will be presented for the study of the interior of the larynx, the posterior nares, and the vault of the pharynx in normal and pathological states.

As the distance between the camera and object to be photographed is necessarily very short, one of the greatest difficulties was to adjust the light to the sensitive plate so that a depth of focus would be obtained. To do this a small diaphragm, a rapid shutter, a very sensitive plate, and a powerful light must be used.

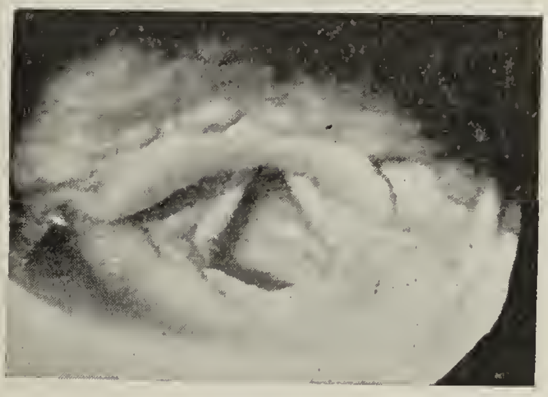

FIG. 2.

The necessary outfit for producing a sufficiently powerful light is represented in Fig. 1. It consists of an automatic two-thousand-candle-power lamp partly inclosed in a metal box.

The front face of the box carries a condensing lens which, when placed nine inches from the arc, gives a focal distance of twenty inches. This relation of light and lens was found to give the most satisfactory illumination. The lamp and accessories are fitted to a narrow board which is placed upon a table of sufficient height. The light can be raised or lowered by means of a device designed for that purpose. The rheostat is placed upon a shelf beneath the table top. The whole light outfit is but a modification of the electric stereopticon. This one is so arranged that by adding a second condensing lens and an objective lens to the end of the cone-shaped tube in front it can be used as a projecting lantern.*

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* Read before the American Laryngological Association at its eight-nth annual congress.

The manner of using the light in photographing the larynx or posterior nares is the same as I described it in connection with the sunlight condenser.† The beam of light should be caught upon the forehead mirror several inches inside of the point of focus. Good photographs can usually be obtained at the first sitting, though sometimes two sittings are required, for it is not always possible immediately to find the focus or determine the amount of light needed. At the second sitting of one patient I made eighteen exposures and obtained fourteen good impressions. If the apparatus is in order the time needed to secure a photograph of any larynx does not exceed that necessary for making a careful laryngoscopic examination.

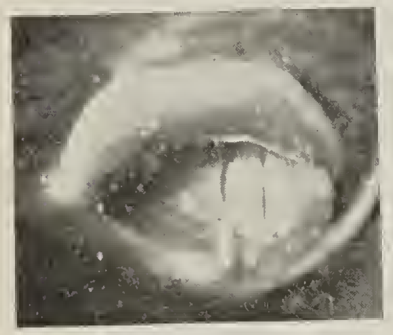

Fig. 3.

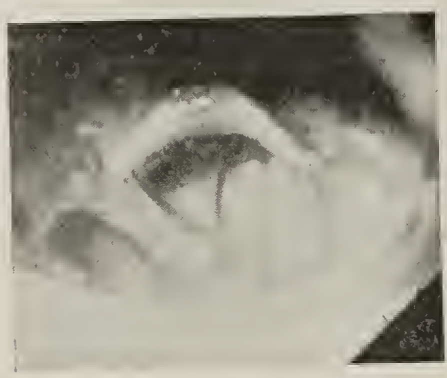

Fig. 4.

As the apparatus was not perfected till last month (April) I have not been able to make a large collection of photographs, but with your permission I will exhibit a few pictures on the screen which fairly illustrate the perfection which the art has reached. While these photographs are, perhaps, quite as good as those taken by the aid of sunlight, I feel convinced that a few changes and additions which I have in mind will give even better results.‡

Fig. 2 represents a normal larynx in quiet respiration and is a fair illustration of the kind of photograph it is possible to take with the new method.#

Only those parts will be impressed upon the plate which receive the light directly from the mirror. When the epiglottis is greatly curled upon itself it is very difficult to get a picture of the whole length of the vocal bands, because the axis of the lens and the line of illumination are not the same. If the interior of the larynx, in such cases, is completely exposed to the lens, the illumination must be made obliquely, which, of course, gives deep shadows. If, on the contrary, the larynx is fully illuminated through a horseshoe epiglottis, the exposure must be made somewhat obliquely, which necessarily precludes an impression of the whole of the interior of the cavity.

The angle of the mirror employed is an important matter. The more acute the angle the greater the liability of exposing only the anterior portion of the larynx and the base of the tongue, and also of the tongue intercepting the exposure to the lens. When a mirror with too obtuse an angle is employed, in order to expose the parts satisfactorily to the eye, the camera must be lifted so high that the line of exposure will be above the line of illumination. This again will result in exposing only the anterior parts of the larynx. I use two mirrors for each sex; one with an angle of a hundred and thirty-five degrees, the other of a hundred and forty degrees to the axis of the lens. One or the other of these is capable of being adapted to any throat, so that the lines of illumination and exposure will be the same.

Another interesting feature in laryngeal photography is shown in Fig. 3. I refer to the difference in the width of the vocal bands. Though this, no doubt, is due to the mirror being held somewhat obliquely in this photograph, the same effect is not produced in the photographs of every larynx, even when the mirror is held more obliquely than it was in this instance. The only explanation I can give of the cause of this effect is that the ventricular bands lie at a greater distance from the vocal bands than is usual, and naturally the higher their position, if the mirror is not held exactly in the median line, the more one ventricular band will cut off a view of the vocal band on the mirror side.

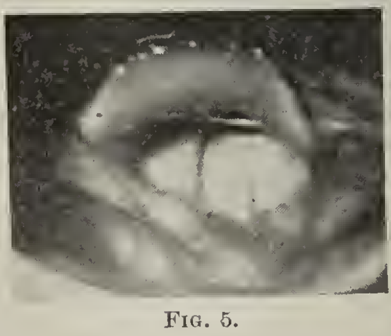

Fig. 5.

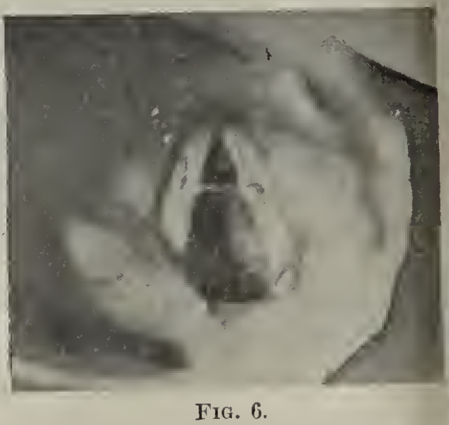

Fig. 6.

In the next photograph (Fig. 4) it can be seen that the mirror must have been held more to the side than in the one we have just criticised, and yet the vocal bands seem to be of equal width. The openings of the ventricles of the larynx are presumably quite narrow in this case. This photograph also represents mild catarrhal laryngitis. The outer edges of the vocal bands are moderately congested, and a considerable amount of mucus can be seen in the glottic chink.

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* Though I have not yet had an opportunity to test it, I am inclined to the belief that the new self-feeding and self-focusing arc lamp recently placed on the market will answer the purpose even better. The apparatus used in these experiments was made for me by Charles Beseler, of New York.

† *New York Medical Journal*, December 13, 1884.

‡ Twenty-one photographs were shown in a lantern-slide exhibit, eight of which have been reproduced for publication in this article.

# The photographs shown in this article have not received any kind of artistic assistance. They have lost considerably by the process of reproduction, and a slight amount of retouching, such as is usually done with reproductions by the half-tone process, would make them as strong as the original negatives. While retouching might be legitimate and even advantageous in some instances, it would be a dangerous practice in most cases, for if the retouching was not skillfully done, or the lines and shadows were not accurately copied, the results would be disastrous to physiological and pathological studies made with this method. It may be appropriate for me to say here that I have never permitted retouching to be done to any of the negatives of the larynx or posterior nares which I have made.

The photograph represented in Fig. 5 shows the larynx of one of the sopranos of the German Opera Company who sang in this country during the past season. For reasons of her own the lady prefers that I should not make public use of her name. She suffered from a cold during the latter part of her engagement, but was forced by her contract to sing while the larynx was the seat of active congestion. The condition of her larynx which was present just before she sailed for Europe can be seen in the picture. The edges of the vocal bands have lost their sharp definition because of the presence of catarrhal secretion.

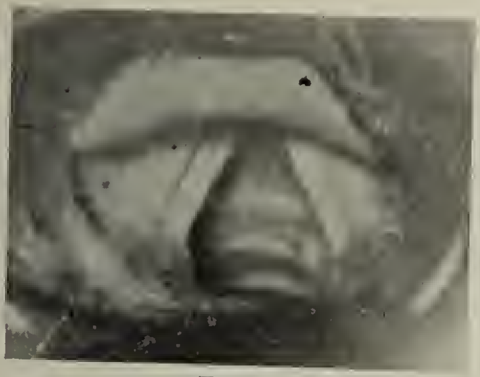

Fig. 7.

The next photograph (Fig. 6) is exhibited to show a small growth on the left vocal band in the larynx of a Sister of Charity who had strained her voice in singing. She was moderately hoarse, and was unable to use any of the tones above the middle of her compass in singing. I removed the growth with tube forceps two weeks ago and sent it to Dr. Jonathan Wright or microscopic examination. He reported later that it vas a simple inflammatory neoplasm, as I had supposed.

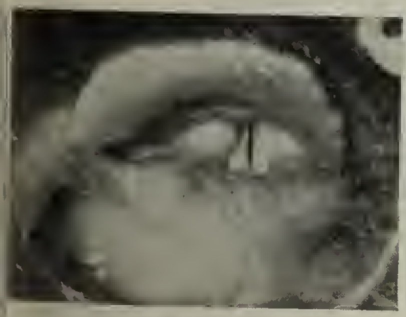

Fig. 8.

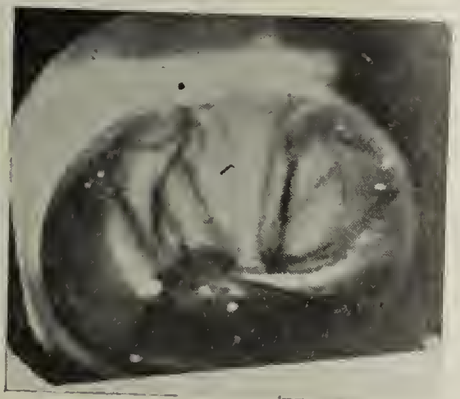

Fig. 9.

Fig. 7 represents the appearance of the larynx after he removal of the growth shown in Fig. 6.

Fig. 8 shows the larynx of a lady whose pulmonary pices are both consolidated and who has tubercle bailli in her sputum. The voice is weak, and the cause f it can be seen to be an impaired action of the internal tensors. There is also a spasmodic contraction of the ventricular bands, the effect of which is well shown in the picture.

Fig. 9 is a photographic representation of the rhinoscopic image in a subject with postnasal catarrh, showing evidence of both the hypertrophic and atrophic varieties of the disease.

However complicated the art of photographing the larynx and posterior nares seems, it is nevertheless a simple procedure when once understood, and, though it may be somewhat difficult to acquire, the possibilities of its power of adding to our knowledge of the normal and diseased conditions of the throat and nose must be a sufficient reward for the labor required.

A CONTRIBUTION TO
THE PATHOLOGICAL ANATOMY OF ETHMOID DISEASE.*

By JOHN NOLAND MACKENZIE, M.D.,
BALTIMORE.

The poverty of our exact knowledge concerning the finer histological changes that take place in the ethmoid region during disease of that structure induces me to bring before you the microscopic appearances observed in several cases (which I select from a number of similar ones) which may be considered as representative of a certain type or class of inflammation of the ethmoid cells sufficiently commonly met with in practice.

Out of the series I take the following case, the narrative of which may be briefly told:

It is the simple story of a unilateral purulent or muco-purulent nasal discharge, sometimes scanty in amount, sometimes very profuse, extending over a period of nearly eighteen years, in a young unmarried woman of twenty-nine, in other respects in apparently good health. The origin of the disease is obscure; but in all probability it is the legacy of a neglected intranasal inflammation, possibly an acute or subacute endorhinitis.† The discharge, which has always been free from odor and which under the microscope is destitute of organisms other than the ordinary pus-producers, varies greatly in amount at different times. Sometimes absent, it is at others very great in amount and accumulates with marked rapidity, and is associated with extensive crust formation. A notable feature is its very pronounced increase during menstrual excitement (menses), at which time the other symptoms are notably intensified.‡

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* Abstract of remarks made before the American Laryngologica Association at its eighteenth annual congress.

† The term "rhinitis," employed as descriptive of inflammation of the lining membrane of the nasal passages, is a misnomer and its use illogical. The term "endorhinitis" is much more logical, more exactly descriptive of existing conditions, is not too abrupt a change from the old nomenclature, and is sufficiently short to warrant the transition from the old to the new.

‡ See on this subject the paper by the author on Irritation of the Sexual Apparatus as an Ætiological Factor in the Production of Nasal Disease. *American Journal of the Medical Sciences*, April, 1884.

The discharge is associated with supraorbital neuralgia of the corresponding (right) side of the head and other pains variously referred to the back of the head, neck, and even as low down as the shoulder blade. There was no tenderness externally on pressure.

These symptoms had begun to affect her general health and had produced a condition of nervous excitability which had interfered greatly with her social duties as a leader of fashionable society.

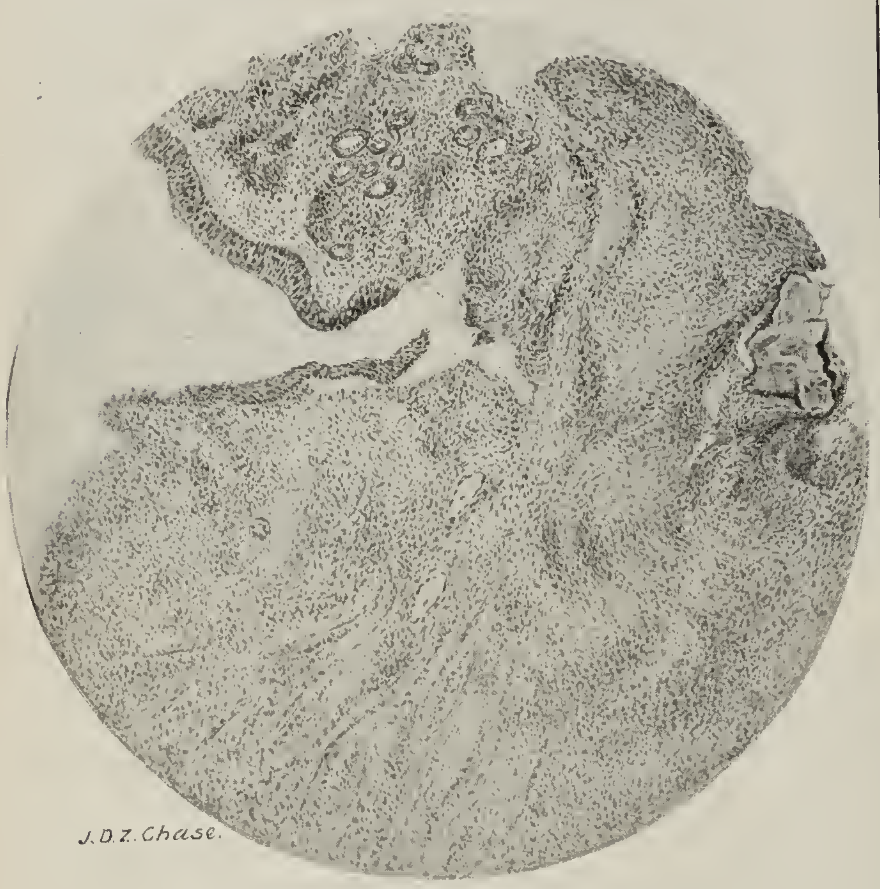

FIG. 1.

She came to Baltimore in the latter part of November, 1895. Just prior to that time she had undergone an operation (curettement) on the uterus for the relief of endometrial inflammation, the result of careless exposure at the menstrual epoch. At her first visit an ocular examination of the interior of the nose revealed nothing worthy of special notice except a moderate thickening of the anterior end of the middle turbinated body.

Between it and the external wall was a very thin line of purulent discharge. A delicate silver probe passed with some difficulty between the turbinated body and the external wall, impinged high up upon a rough, uneven surface, and its passage was followed by some bleeding and increase in the discharge. The whole turbinated ethmoid region was exquisitely sensitive to the touch. As it was impossible, both from the narrowness of the passage and the great hyperæsthesia (even under cocaine), to introduce even the smallest curette, I removed (with the cold-wire snare) the anterior end of the middle turbinated body as a preliminary step to opening the ethmoid cells. The operation was followed by considerable hæmorrhage and profuse purulent discharge. On the following and subsequent days I removed the diseased structures with Grünwald's cutting forceps and curettes.

In order to illustrate the pathological changes that take place in this particular grade of inflammation of the ethmoid region I have had the accompanying drawings made. They were taken from sections of portions of the turbinated and ethmoid cells removed with the forceps and snare. The sections were carefully prepared by Professor Simon Flexner, of the Johns Hopkins University, and it is from his report of the microscopical examinations that I shall quote.

Fig. 1. Section through the mucous membrane of the ethmoid. The whole represents an hypertrophied mucous membrane in which a few glands only are preserved. The new tissue is highly vascularized, resembles young granulation tissue, contains small accumulations of leucocytes, and is covered by a layer of laminated epithelium, the superficial cells of which are columnar, ciliated in character. The new tissue can be traced inward as far as the bone, a small section of which is included in the drawing. The preserved glands are atrophied, separated by an intervening new growth of tissue, and are rapidly undergoing obliteration. The resemblance of the new tissue to sarcoma is at first suggestive. The differences are (1) the collections of small inflammatory cells in the mass of young tissue; (2) the slight tendency to invade the deeper structures; (3) the presence in other parts of the specimen of definite adult connective tissue of which this granulation tissue is probably an early stage; (4) the clinical history, which is not at all suggestive of malignant tumor.

Fig. 2. Hypertrophied mucous membrane of the ethmoid (?). The tissue constituting the hypertrophy is composed of small round and spindle cells, and apparently is a granulation tissue. Among these cells a considerable number of polymorpho-nuclear leucocytes are scattered. Between the cells a basement substance, for the most part granular, but in part fibrillated, is present.

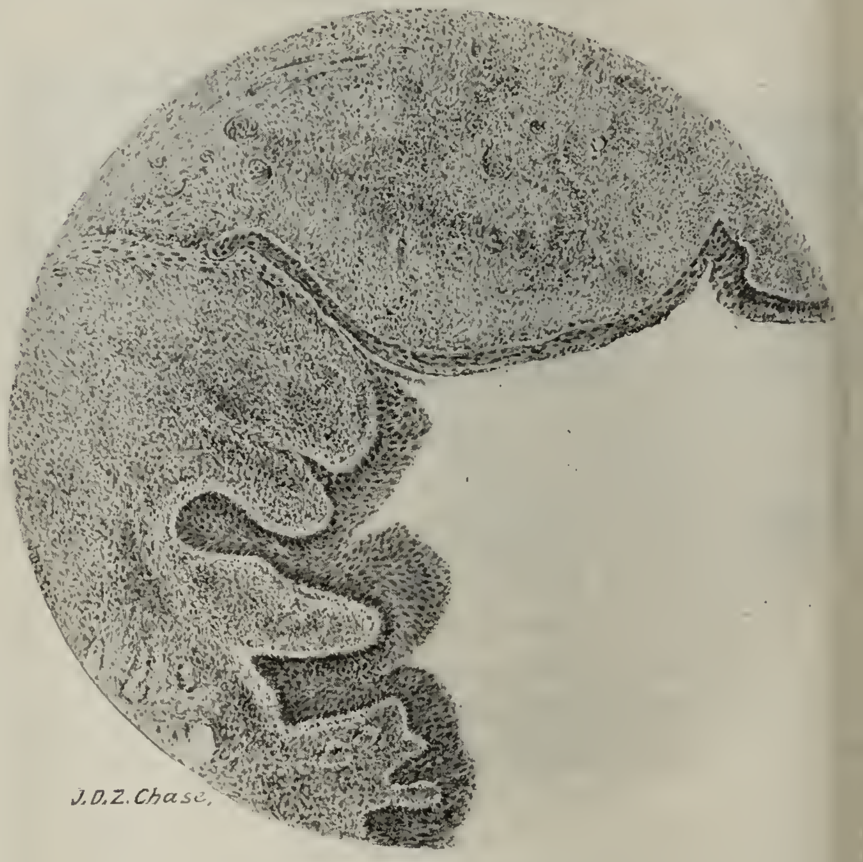

FIG. 2.

Definite adult fibrous tissue does not occur in this part of the section. The surface epithelium shows the most interesting changes. It is of a laminated character, the superficial cells being high (columnar) and ciliated.

The normal epithelial layer is found to become thickened and thrown into folds resembling the normal interpapillary processes, and to grow downward into the new tissue in an atypical manner. Normal glandlike structures are entirely wanting in this new tissue.

This growth of epithelium is atypical in character, not malignant, and distinct from epithelioma. Similar atypical growths are found in the base of old leg ulcers, healing chronic ulcerations of the intestines, etc.

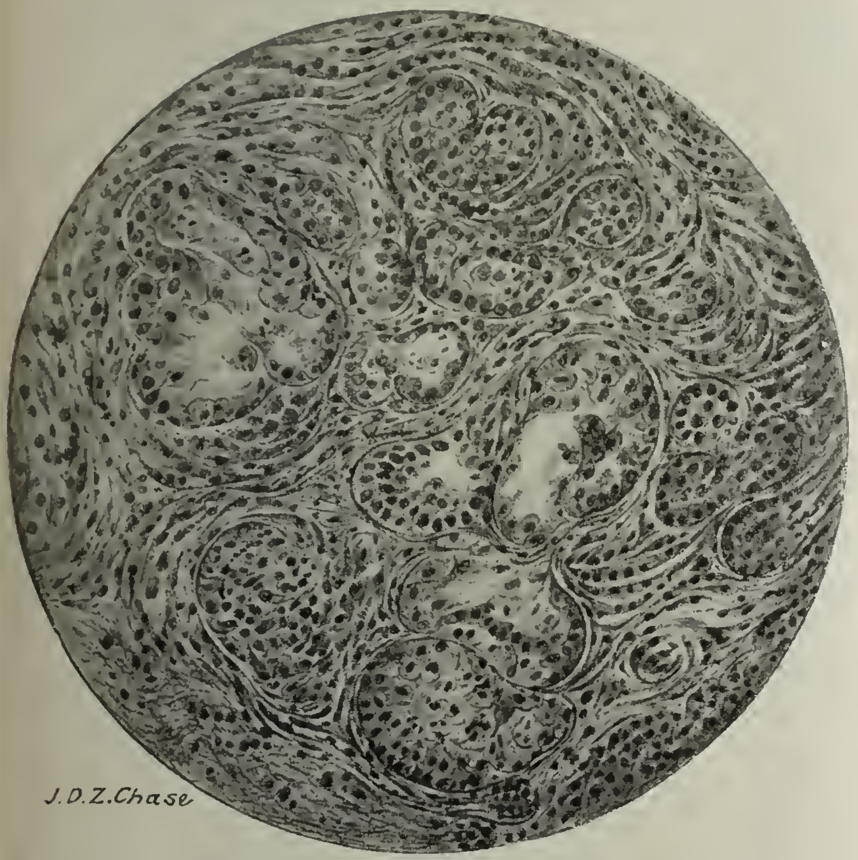

FIG. 3.

Fig. 3 shows the glands of the ethmoidal mucous membrane being separated by a new growth of tissue which also is invading the gland lumina. The glands to the right are quite normal, while those to the left are more or less altered, especially the one in the lower left-hand corner of the drawing. The last shows an ingrowth of spindle-shaped elements and small round cells, and among these a few polymorpho-nuclear leucocytes. In the extreme lower left-hand corner the finely fibrillated tissue is a false membrane composed of hyaline fibrin with a few pus cells, and dates from an operation some days previous to the removal of the tissue from which this was taken. The pseudo-membrane mentioned apparently was produced by a direct transformation of the cells of the tissue into this fibrinous material. Very few emigrated cells seem to have participated in the process.

The chief lessons to be learned from the foregoing study are:

1. That the so-called "myxomatous degeneration" described by writers on ethmoid disease is not due to mucous change at all, but is the result of simple inflammatory action.

2. That authors have fallen into this error because they have approached the subject solely on its clinical side and without the aid of the microscope.

3. That purulent ethmoiditis may in many cases endure for years without producing any bone lesion whatever, and that therefore the proposition that all ethmoiditis tends toward and usually develops into necrosis has no foundation in actual pathological fact.

4. That the changes found represent successive stages of the same affection, and that therefore divisions and subdivisions of "ethmoiditis" tend to introduce an element of confusion into our pathological conception of the disease.

5. That the ethmoid region affords probably the most excellent place for the study of the origin of so-called nasal polypi.

6. Finally, of great importance is the striking similarity between the young granulation tissue found in the ethmoid region and the structure of round-cell sarcoma, and hence the possibility of error in microscopic diagnosis in early and even in more or less advanced cases.

Let us consider these propositions in detail:

I. It is high time to clarify our ideas in regard to the frequent existence of myxomatous tissue within the nasal passages. The term "myxoma," as applied to neoplasms in these cavities, has long been used in a loose and misleading manner. Myxoma is the embryonal tissue from which fat is originally formed, and is therefore homologous with lipomatous tissue. Hence we should naturally expect to find it in situations where adipose tissue most abounds, and this is, as is well known, clinically the case. If, then, we understand by "myxoma" a structure histologically similar to that of the vitreous humor and fœtal cord, then the nasal passages would be among the last places in the body in which we would look for mucous tissue. The growth commonly found in the nasal passages is not a true mucous structure, but an œdematous fibroma which is usually inflammatory in origin. We may find areas of tissue resembling myxoma in growths removed from the nose; but in regard to the frequency with which true mucous tumors are found in this region, I am at one with Jonathan Wright,* when he declares that such is not "the usual character of the growth we know clinically as gelatinous nasal polypus."

The same is true of the diseased tissue removed from the ethmoid region. Here the closest scrutiny fails to detect the presence of myxomatous tissue (see plates). Our nomenclature would, therefore, be more exact if we discarded entirely the terms "myxomatous" and "gelatinous" in our classification of intranasal neoplasms.

II. The macroscopic appearance of the tissue removed from the ethmoid and middle turbinated cells resembles quite often the structure which we have heretofore looked upon as myxoma; but I have yet failed to find on microscopic examination any trace of true mucous tissue.

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* *Transactions of the American Laryngological Association*, 1893, p. 80.

III. The most radical view of this subject that I have met with is the assertion of Bosworth,[*] who, speaking of the "early occurrence of necrosis and exfoliation of bone," makes the statement that "the tendency in all cases, and the result in the large majority of instances of a suppurative inflammation of the ethmoid cells, is necrosis of bone," and that "all ethmoiditis tends toward, and usually develops sooner or later into, necrosis." In the light of my own experience, it is extravagance of statement to aver that there is an inherent tendency in all cases of ethmoiditis toward necrosis or even caries. Leaving out cases due to specific (syphilis, tuberculosis, etc.), chemical (mercury, phosphorus, etc.), or traumatic causes, it is not the rule to find necrosis or even caries of bone. I have never met with them except as accidental or incidental phenomena. Suppuration may go on for years without involvement of the denser structures. That bone lesions should be found in cases in which the pus can find no exit, or in which the blood-vessels have been so changed by the infective process that loss of substance in the soft and bony parts has occurred, is not in the least degree to be wondered at. But that there is any inherent power in simple or even suppurative inflammation of the lining membrane of the ethmoid cells to produce caries or necrosis of bone is highly improbable and not in accordance with clinical fact. Such tendency is not found elsewhere in this portion of the respiratory tract, and the ethmoid region should therefore furnish no exception to the rule. The simple truth is that when the inflammatory process reaches the bone, changes may take place in that structure similar to those found in the stage of atrophic endorhinitis, viz., absorption and disappearance.

In a large number of turbinated bones removed by Grünwald[†] only a few showed signs of secondary caries, and in these the bone lesion was not primary, but secondary, and due to long-continued irritation of pus, not from the situation of the ulcer, but from elsewhere—more in the nature of a decubital ulcer.

IV. We unnecessarily complicate matters by describing as different varieties the different stages of one and the same disease. In the case before us, as can readily be seen from the above, we are dealing with a chronic inflammatory process which in many respects follows the fortunes of inflammation in the lower nasal passages and shares a similar fate.

V. An examination of the diseased tissues from the ethmoid and middle turbinated regions in the cases submitted to the microscope would seem to indicate that in this particular situation, at least, the ordinary nasal polypus is developed as follows: The *first stage* consists in the formation of young granulation tissue, the result of inflammatory action. In the *second stage* this tissue becomes gradually converted into definite adult connective tissue, which in the *third stage* gradually separates and causes more or less complete obliteration of the normal structures, and in the *fourth stage* converts them into a fibrous mass. In this condition the growth is extended from, let us say, the ethmoid cells, by the *vis a tergo* of the hyperplastic changes within its interior, into situations where, acted upon by the force of gravity, it becomes œdematous and assumes the form and position characteristic of these growths in obedience to the operations of that natural law.

The conditions under which the conversion of young granulation into adult connective tissue takes place are as yet imperfectly understood. That such conversion does not always occur is evident from the presence of masses of granulation tissue in the form of definite tumors, notably in the region of the *hiatus semilunaris*, in cases of sinus inflammation. Possibly, therefore, the granulomata found in this situation may represent the original granulation tissue which has not undergone fibrous change.

I can not go as far as Grünwald[*] in ascribing the genesis of nasal polypi to suppuration. They are undoubtedly in the vast majority of cases (to say the least) the product of inflammation. The presence of suppuration, frequent though it may be, is simply an accidental or, to speak more accurately, an incidental phenomenon, and is therefore of secondary importance.

EMULSIONS.

By JOHN F. RUSSELL, M. D.

The Dispensatory of the United States of America (1892), under the head of Misturæ, says: "This term should be restricted, in the language of pharmacy, to those preparations in which insoluble substances, whether solid or fluid, are suspended in watery fluids by the intervention of gum arabic, sugar, the yolk of egg, or other viscid matter. When the suspended substance is of an oleaginous nature the mixture is properly called an emulsion." "The object of these preparations is usually to facilitate the administration, to conceal the taste, or to obviate the nauseating effects of unpleasant medicines." Then follow descriptions of the best methods of making emulsions. "The plan most largely used in this country is to make the emulsion with mucilage." Again, "Care is required never to get the oil in excess of the mucilage." Again, "The white of egg has been frequently ordered by physicians as the suspending substance, but it is inferior for this purpose to the yolk or to gum arabic."

We learn from the above that emulsions should be made:

(1) Preferably with mucilage.

(2) They should contain not more than fifty per cent. of oil.

(3) It appears to be a matter of indifference whether

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[*] *Diseases of the Nose and Throat*, vol. i, New York, 1889, p. 482.

[†] *Die Lehre von den Naseneiterungen*, München, 1896, p. 31.

[*] *Loc. cit.*, p. 80.

yolk of egg or gum arabic is used, but the latter is superior to white of egg.

We further learn:

(4) That the object of these preparations is usually to facilitate the administration, to conceal the taste, or to obviate the nauseating effects of unpleasant medicines.

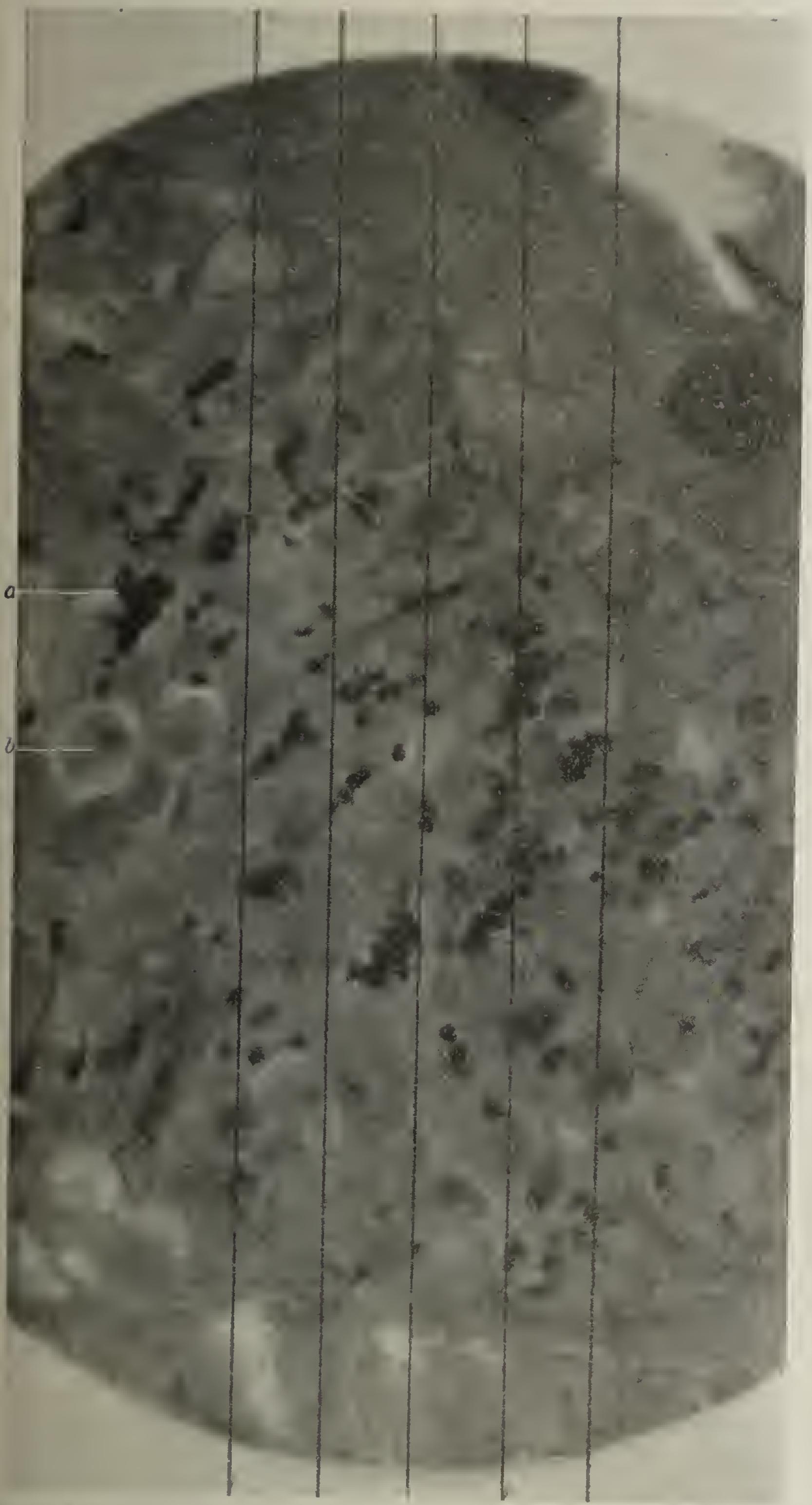

FIG. 1.—Section of a villus from the small intestine of a cat during the digestion of fat. Fat stained black with osmic acid.

Dunglison's *Medical Dictionary* defines emulsions as follows: "Pharmaceutical preparations, of a milky-white opaque appearance, composed of oil divided and held in suspension in water by means of mucilage."

Worcester says: "A medicinal preparation of a milky appearance, composed of a fixed oil divided and held suspended in water by means of mucilage."

There seems to be a very general agreement that mucilage is an essential part of oil emulsions.

Fat is a necessary article of diet. When a physician prescribes oil or fat, he attempts to supply in a concentrated form what the healthy individual obtains embodied with his other daily food. He tries to supply a deficiency of food. Whether this deficiency be the result of less fat taken with the food or an increased consumption within the body is of no importance in this connection. The plain fact is that the individual lacks fat, and fat is essential to health. When the physician prescribes an emulsion of fat he further attempts to present the fat to the absorbing vessels of the bowel ready for immediate absorption. He prescribes a predigested food. Gum arabic and tragacanth are not foods. In former years gum arabic was regarded as

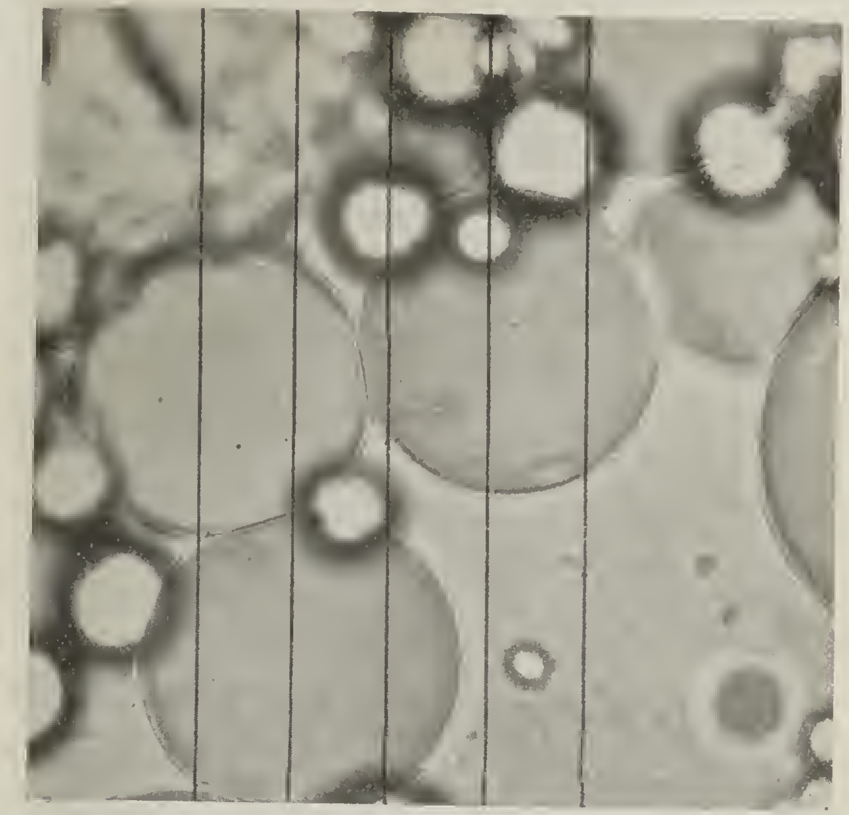

FIG. 2.—The worst commercial specimen obtained, said to contain thirty-three and a third per cent. of cod-liver oil, but probably did not contain over twenty-five per cent. The globules having a fine bounding line only are in focus.

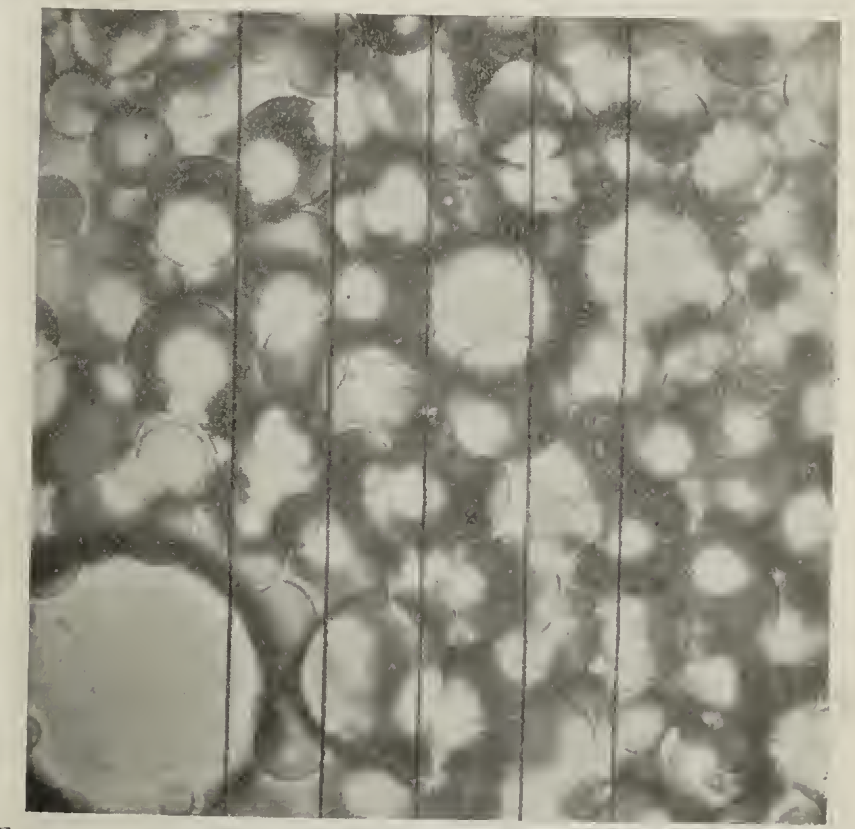

FIG. 3.—The best commercial specimen obtained. Said to contain thirty-three and a third per cent. of cod-liver oil.

nutritious. *The United States Dispensatory* for 1865 says: "Its nutritive properties have been denied; but the fact of their existence rests on incontrovertible evidence." On the other hand, the *Dispensatory* for 1892 says: "It has been used as a food, but has very little if any nutritive value." Tragacanth is much more commonly used because of its cheapness. It is even of less value. It is insoluble in water, and passes with difficulty through animal membrane. And yet we are compelled, when prescribing an emulsion, to give not less than fifty per cent. of these substances or mixtures which we know to be inert. Whether they also increase the difficulties of absorption is a matter of conjecture. I consider it just, in the face of the facts, to assume that they do. In the first place, as stated above, tragacanth, the gum most commonly used, is insoluble in water. Secondly, each oil globule receives an envelope or coating of gum. Upon these two facts, of course, rests the property of these preparations to "hold" and at the same time make it possible to use a large proportion of water. Now, if the bowel requires, before absorption can take place, a certain fineness of division of the globule, as I hope to show later it does, it follows, if the globules are too large to admit of absorption—and my experience on this point is shown in the accompanying photographs—that the digestive fluids are not only compelled to break up the globules anew, but are first compelled, in order to reach the oil, to dissolve the insoluble envelope of gum. Considered merely from the standpoint of food, their use in emulsions, particularly in such large proportion, is indefensible, but certainly not more so than the absurd conclusion that "the object of these preparations is usually to facilitate the administration, to conceal the taste, or to obviate the nauseating effects of unpleasant medicines." The latter two reasons furnish the working basis for the ignorant and sometimes harmful practice of mixing anything with fats, whether nutritious or innutritious, active or inert. No care as to how little oil or fat or the fineness of division of the globules. The whole interest and attention is concentrated upon palatability and making the emulsion "hold." Considerations of little importance compared with the real object of fat administration.

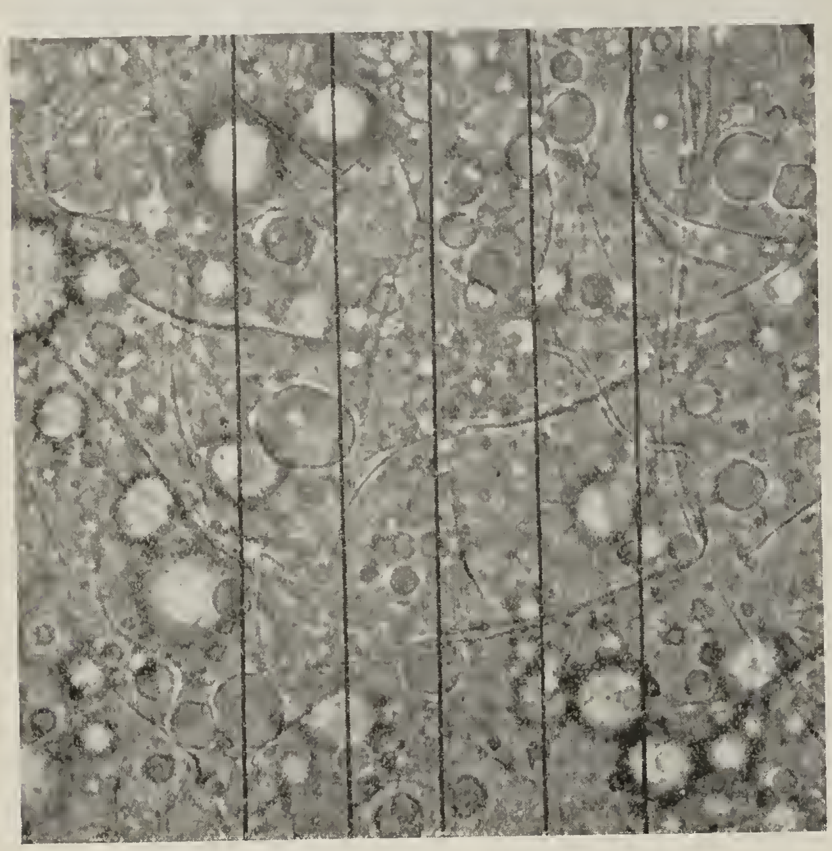

FIG. 4.—Dobell's pancreatic emulsion of solid fats.

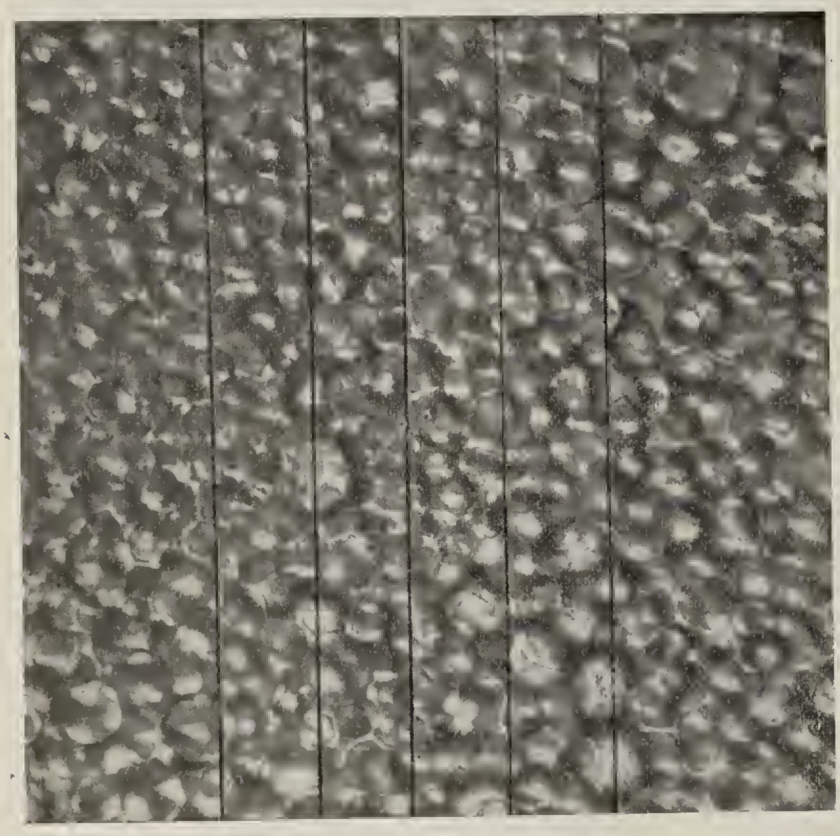

FIG. 5.—Cream which has been allowed to rise twenty-four hours.

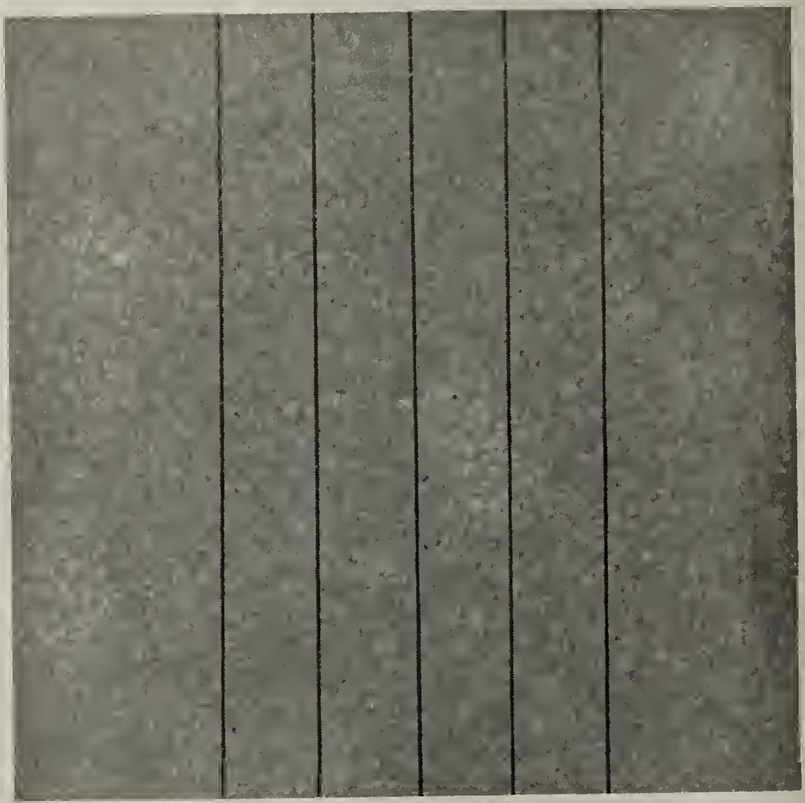

FIG. 6.—The author's emulsion, which contains eighty per cent. of cod-liver oil.

It is estimated that the healthy adult individual requires an average of two ounces of fat a day. This, of course, is taken in the form of food; a little of it as fat pure and simple, but by far the greater quantity incorporated with other food. It is this latter circumstance which enables the bowel to dispose of it readily, since the fat is slowly liberated from the food and acted upon gradually. It is manifestly less difficult, for both the palate and digestive organs, to eat bread spread with butter than to swallow butter from a spoon and then chew the bread. When we prescribe fats unemulsified, concentrated, even assuming the patient's digestive apparatus to be in normal condition, we exact an unusual and severe labor. The difficulties are tremendously increased when digestion is impaired. It is precisely for this reason that emulsions are given. We can not imitate the union of fat and other food as it occurs in ordinary diet, nor do we desire it, since we can go a step farther and digest it, at least in so far as that it is made ready for absorption by the bowel. Proper emulsification of fat is digestion. Foster, in his *Text-book of Physiology* (1895), page 392, says: "Fats we may therefore say are digested, for this emulsification is the main digestion of fats, by both bile and pancreatic juice working together. Hence, if either bile or pancreatic juice be prevented from gaining access to the small intestines, fat is not digested, it is not absorbed, and appears in the fæces. This is true at least of ordinary fat; milk, in which the fat is already emulsified, may be digested and absorbed in the absence of these secretions." In other words, milk or cream, because they are emulsions, will be absorbed under these circumstances, while butter, for instance, can not be.

Fats differ from other foods in two particulars, viz.:

(1) They are not changed in composition by digestion.

(2) They ultimately reach the circulation by means of special absorbent vessels, the lacteals.

In other words, the digestive apparatus is only called upon to break up the fluid fat into small globules, and when this has been done the lacteals absorb it, roughly speaking, and the digestion of this particular food has been accomplished. Thus far this certainly appears simple. Whatever one's belief on the general subject of predigested foods, it can not be denied that the fats offer the most promising field for its application, since digestion in their case, as mentioned, involves no chemical change, no change in composition. To predigest fat, then, it is only necessary to break it into globules fine enough to be absorbed. It is important to emphasize that it is not enough to break it into globules; they must be small enough to penetrate the epithelium covering the villi. We know that all fats are broken in the bowel into small particles (emulsified) before being absorbed, fats being non-diffusible, and that the fat observed covering and penetrating the epithelium in process of absorption, and the fat in chyle, which has been absorbed, are invariably found in very fine division, the latter, however, much finer than the former. It is therefore reasonable to suppose that absorption, to some extent at least, must be governed by the smallness of division. Either this uniform fineness of division seen in the bowel is necessary, or we are forced to conclude that Nature habitually overworks herself in this particular. The mechanism of the absorption of fat is still surrounded by mystery, but one thing at least is clear, viz.: "In the interior of the intestine, in the substance of the columnar cell, and apparently in the labyrinth of the reticulum, it is simply emulsified fat, consisting of globules small and large; within the lacteal radicle it consists partly of the same easily recognized globules, but partly of the extremely divided molecular basis; it is now no longer emulsified fat but chyle." (Foster, page 418.) I think we can safely accept as a fact that fine division of the globule is essential in an emulsion if we are to imitate bowel emulsification.

Accepting, as we must, that properly emulsified fat, in which the globules are exceedingly small, is a predigested food, it is clearly important to determine the value of such emulsions as are presented for use. The first consideration, of course, is that the emulsion should contain only food substances, water being considered as coming under this meaning. The second is the size of the fat globules. And in order to judge these it is necessary to have some standard. Milk and cream are commonly considered as "Nature's emulsions," and in the latter the globules are very fine and uniform. But it should be remembered that the size of the globule is much smaller in milk just secreted than in the same fluid some hours older. If a baby be taken from the breast after nursing five or ten minutes, and some milk collected, the difference in size of the globules at the time of collecting and a few hours later is very striking. After much deliberation, I finally decided that a section of the bowel of an animal, killed in full digestion and mounted so as to show the fat globules just entering and within the villus, would give the most accurate gauge. A photographic reproduction of such a section prepared for me by Dr. George A. Tuttle, of the Presbyterian Hospital, from a cat, is here given for purposes of comparison.

About all of the emulsions of commerce are made after the plan of the *Dispensatory*—viz., a suspension of fat in gum. There is something grotesque in this definition as applied to a food. Overlooking the gum, it implies that emulsification is merely a mechanical process. Any one who has seen the action of pancreatic juice upon fats will quickly abandon the idea that it is simply mechanical. It is difficult also to apply this reasoning to the mammary gland. The percentage of oil is low in these preparations, making the dose unnecessarily bulky and the cost excessive. They are not soluble in water. They mix while being stirred, but quickly rise to the surface when at rest. This fault adds to the difficulty of their administration, because the insoluble gum coats the mucous surfaces of the food passages and, being but slowly removed, prolongs the unpleasant taste.

It may be well to mention briefly the necessary features of emulsions:

(1) They should contain no mucilage or gum of any kind, or other innutritious substances.

(2) They should contain as much oil or fat as possible and full one hundred per cent. of food properties.

(3) The globules should be finely divided, and should correspond to the standard.

And I might add—

(4) The object of these preparations is to furnish a predigested food.

For some years past I have been making observations, at the Colored Hospital, on fat-giving, chiefly among consumptives, and my attention was attracted to this subject from the fact that I finally concluded it was most desirable to give fat food in the form of emulsion. In searching for a method of preparing oil I found none that did not involve what seems to me to be a misconception. Dr. Horace Dobell's well-known method of emulsifying solid fats with pancreatic juice answers all requirements. There is no foreign matter, and the size of the globules is sufficiently small. I finally adopted, with necessary modifications, this theory in making oil emulsions. The objection urged against the administration of pancreatic juice or the so-called extracts—viz., that they are destroyed by the acid of the gastric juice—does not apply to these emulsions. In the first place, the conditions are entirely changed. The pancreatic juice has acted and is not expected to further act when the emulsion is finished. Next, a one-per-cent. solution of hydrochloric acid does not destroy the emulsion or change it in any appreciable way, while the acidity of the gastric juice is but two tenths of one per cent. Again, Foster (1895, p. 321, sec. 180) mentions that there is experimental evidence that emulsion of fats, to a certain extent, takes place in the stomach, though the great mass of fat is not so changed. Lastly, the clinical results obtained at the hospital, a report of which I hope some time to publish, satisfy me that these emulsions are not destroyed in the stomach.

The following note from Dr. Power, who photographed the specimens, explains the cuts:

"The six cuts are reproduced from photographs taken under like conditions and with the same magnification, viz., nine hundred and forty diameters. Upon each cut will be noticed five parallel lines placed at a uniform distance apart. This distance represents one hundredth of a millimetre, and is intended to facilitate comparison of the oil globules.

"Fig. 1, section of villus from small intestine of cat during digestion of fat. Above, to the right, are seen semidetached epithelial cells. In the centre lies the body of the villus, showing (*a*) groups of fat globules stained black with osmic acid; (*b*) many isolated, faintly stained nuclei. Smooth muscle, etc., forming the villus, are plainly seen.

"Figs. 2, 3, 4, and 5 need no further explanation.

"Fig. 6. We here find a marked change in appearance, and the following points may be noted: The globules average in size the same as those seen in the lymphatics of the cat's intestine (Fig. 1). They are much more closely packed than in the other emulsions. Their refractive index is more nearly that of the water of the emulsion, so that it is with difficulty that they are distinguished.

"The negatives were taken with a Leitz oil-immersion lens (one twelfth) and a No. 4 Zeiss projection eyepiece. Isochromatic plates were used and prints were made by the carbon process.

"HENRY POWER, M. D."

Should we not insist upon more care in the manufacture of these preparations? It is certainly more expensive for the manufacturer, both in the greater skill required and the increased quantity of oil, but do we not owe some consideration as a profession, and the dispensers, to the consumers? If my conclusions are correct, the ordinary emulsion of commerce, though answering all the requirements of the *Dispensatory*, is certainly largely inert if not harmful. The burden of this error lies upon our patients. Can not we lift it by appealing to the manufacturers and insisting upon a higher standard?

I am aware that very little if anything new is offered in this paper. The use of the slide, showing the fat globules in process of absorption, as a measure of fineness, appears to me more nearly scientific than milk or cream, and, so far as I know, is original. My only excuse for writing of the trite facts of fat digestion, and indeed the whole subject of fat emulsions, is that while perfectly familiar to the whole profession nothing seems to have been done to remedy what we all know to be its evils. I have refrained from discussing the character of the oils and fats commonly used in emulsions, their food values, or the possibility of specific remedial properties. While nearly related, I prefer not to discuss it here. The whole object of this short article is simply to arouse a more critical spirit in the examination of the various preparations of a necessary article of food.

21 WEST ELEVENTH STREET.

ASEPSIS AND ANTISEPSIS IN CHILDBIRTH AND THE PUERPERIUM.

By C. E. SKINNER, M. D.,
NEW HAVEN, CONN.

THIS is a plea for the routine employment of thorough antisepsis in the interests of our women.

It is very unusual in these days to take up any two consecutively issued numbers of a medical magazine without finding in one of them an article relating to the treatment of puerperal sepsis or its more or less remote consequences. The abundance of literature upon this subject evidences its extensive prevalence and dangerous tendencies, as well as the difficulty which at present exists of satisfactorily managing the accident and its sequelæ. It does not confine its ravages to any one class. That most numerous of all classes, those who are in moderately comfortable circumstances, and by this I mean the wage-earners who receive from twelve to twenty dollars per week, furnishes the largest number of victims. These individuals do not consider themselves able to afford the services of a high-priced man, and a first-class man is always moderately high-priced, so they engage the one who is "reasonable" in his charges and who "brought Mrs. —— through inflammation of the bowels so well when she had her last baby," and the "careless nurse" allowed her to "take cold."

Laymen are beginning to understand the advisability of an immediate perineorrhaphy in laceration, and to censure the physician who wrongs his patient by neglecting to do it, but their bacteriological knowledge has not yet increased to the point which enables them to appreciate the reason why a parturient woman "catches cold." When they do understand it, which will not be many years hence in these days of wide diffusion of scientific matter by the secular press and increasingly liberal educational influences, many a physician who now occupies a high position in the esteem, respect, and confidence of those who look to him for the removal of their physical ills and the preservation of that most valuable of all possessions, their sound bodily health, will sustain a terrible fall from grace. When they attain to a comprehensive knowledge of the pernicious effects of ptomaines from the streptococcus, the staphylococcus, colon bacillus, etc., with the vulnerabilities of the micro-organisms, he who neglects to earnestly attempt the prevention of puerperal infection will be consigned to a well-deserved and irrevocable desuetude.

Medical men of to-day may be roughly divided into three classes on the germ-infection question in obstetrics: those who deny the whole theory and scout the idea that there is any value in antiseptic procedure; those who acknowledge the truth of the theory and the efficiency of antiseptic management in preventing toxic manifestations, but who neglect asepsis because they despair of its effectiveness being maintained amid the very questionable surroundings of many patients, or because they think that the relatively large number of women who escape sepsis renders it not worth their while to attempt the salvation of the small number who do not, or because people at large will not pay sufficiently large fees to compensate them for the extra trouble required, and some of whom quiet their consciences by rinsing the ends of their fingers in bichloride solution, thus attempting the prevention of a toxicity which they admit to be pregnant with dangerous and sometimes fatal consequences; and lastly, those who acknowledge the theory and do their best to give their patients the full benefit of their knowledge, by surrounding them with the strongest ramparts that science is capable of erecting; whose aim it is to give those who trust in them the best treatment indicated by modern scientific investigation.

The first-mentioned class is very small, and in the light of the overwhelming evidence of universal statistics, which are certainly reliable in this case, it becomes unnecessary to comment upon them. The second class is startingly large, and because of the light shed by statistics their conduct is open to severe reprobation.

There can be no doubt of the fact that unsanitary environment will vitiate our antiseptic efforts to an appreciable extent, and that an ignorant, obstinate, unclean old woman, acting the double rôle of nurse and kitchen maid, will undo in some cases all that our careful, painstaking labor has accomplished; but our asepsis will not be destroyed in all cases by insalubrity of surroundings, and the old woman will not be able to persuade every patient to submit to her officious, sepsis-provoking examinations and dirty ways if we warn the parturient against it, as we always should do, so that in the long run, if thorough antiseptic precautions are always employed, we shall have protected more women from infectious mischief than if we disregard them as a routine measure through a fear that they would be rendered ineffective by the surroundings. The more unfavorable the patient's circumstances, the more careful are we bound to be with her, and a little explanation to the nurse in a kindly way as to the reasons why we are so particular will frequently accomplish a vast deal toward securing her active co-operation and obedience.

Now, if we can reduce the mischievous results of a pathological process even one per cent. by taking extra pains, it is our duty to take them, and surely no one would presume to say that aseptic midwifery is capable of no better results than that under even the most unfavorable circumstances. Every patient who consults us expects that we will exercise in his behalf all the skill and knowledge that we possess, and we are expected to be reasonably diligent and energetic in acquiring the fresh knowledge that is daily being offered us by laboratory workers as well as clinicians, for the benefit of our patients. We are not warranted in taking any chances that may prove destructive to health if it can be avoided. We can not tell in which one of a given succession of cases a measure of treatment the uniform tendency of which is beneficial is going to be ineffective, and for this reason we have no right to omit it in any one through a fear that it might prove useless. We have upon us the responsibility for human health and life, and it seems to me unpardonable to fool with it by unnecessarily or neglectfully taking adverse chances. It is best to be ever upon the safe side. If any one patient's life or health is of no consequence to the physician, it is of consequence to those who have manifested their confidence in our skill, knowledge, and honor by calling us to attend her, and he who betrays that confidence by neglect or laziness is far below the high standard which a practitioner of medicine should occupy.

It is an unfortunate fact that those who need rigid antisepsis the most are the least able to pay for it adequately, but this does not excuse us from giving to every case that we accept the proper care. It is only one of many things ethically required of the practitioner of medicine for which he is not sufficiently compensated. Every man has the right to refuse his attendance upon a case if he wishes, but no man has the right to neglect a case that he has accepted. If one is asked to attend a poor woman in confinement and feels that he can not afford to give the necessary time, trouble, and skill for the amount of money which she can pay, let him send the case to some one else. There are always plenty of recently established practitioners about (to say nothing of the regularly appointed town physicians) who are thoroughly competent to take charge of these cases and with plenty of time to devote to them. They can and will give the woman what she needs and take what she can pay. Some of them are sufficiently enthusiastic in their professional work to take the cases and the chances of getting no money at all. It is easy to evade these patients if we do not want them. When we get cornered, however, by some old patient who has been calling us for years and who "will have no one else," and we consent to take the case for a small fee, it is our bounden duty to treat that woman just as carefully and skillfully as if she paid double the proper fee, and charge the deficiency to charity. It is unnecessary to say that emergency cases should not be refused for pecuniary considerations. The exercise of our professional functions under such circumstances becomes a matter of humanity.

I have entered thus fully upon a brief introductory discussion of this subject because my position on the question is a radical one and I desire to justify it. I am unqualifiedly in favor of routine rigid antisepsis. I am fully aware that suppurating appendages may be due and are due to causes other than puerperal sepsis, but a tremendously large majority of the backachy, headachy, leucorrhoic sufferers from chronic uterine and tubal inflammations can thank a disregard of thorough antisepsis during abortion, miscarriage, labor at term, or the post-partum period for their lives of almost continual invalidism. Now, this matter rests almost entirely with the general practitioner, for the specialist will never be able to drive him out of the obstetrical field, and when we consider that in at least three fifths of existent cases these troubles were preventable, it becomes evident that a radical reform is urgently needed in the prevailing methods of conducting labor cases, and the quicker we effect it the better. Considering the extent of our present positive knowledge about these matters, our patients have a right to demand from us the most efficient prophylaxis that we can give them, and if we do not rise to the occasion we are failing utterly in our professional obligations.

The special articles and materials which are essential for the attainment of thorough asepsis, and which should always be in the obstetrical satchel ready for immediate use, are as follows: A fairly stiff nailbrush; two four-ounce bottles, one containing ninety-five per cent. carbolic acid and the other sterilized water saturated with boric acid; four wide-mouthed two-ounce bottles, the first filled with bichloride tablets for making extemporaneous solutions, the second with permanganate-of-potassium crystals, the third with oxalic-acid crystals, and the fourth with sodium carbonate; half an ounce of some reliable antiseptic powder (I prefer aristol); a half-ounce phial containing sterilized salt solution (two per cent.); a drachm phial full of two-per-cent. nitrate-of-silver solution; a medicine dropper; a fountain syringe; two glass uterine and vaginal nozzles, and two glass catheters. I should like to emphasize my predilection for glass as a material for catheters, etc., because of the ease and perfection with which it can be sterilized by simple boiling. The uses of these various agents will transpire when we come to them.

A flat glass dish, about twelve inches square, to serve as an instrument tray, and an operating gown should always be kept near the satchel. This last is a curiosity almost unknown in the obstetrical practice of the average physician, but it is a prime necessity—not to prevent our clothing from getting blood-stained, as the laity usually believes, but for the purpose of keeping infectious germs from coming in contact with the patient from our clothing. Dust is very infectious, and clothing is sure to be dusty. It is desirable to have it sterilized at the time of its employment, but this is not necessary or even usually possible. If it is boiled, folded outside in, inclosed in three wrappings of fresh clean paper, and put away in a drawer that is dry and not frequently opened, it will be fit for use at any time. A clean folded sheet is a very awkward and ungraceful substitute, but should be used if one has no gown. The latter are not so expensive, however, as to prevent any practitioner from possessing them, and by caring for them as I have suggested, we can always get one if we can get our satchel.

The patient should have in readiness at her home the following articles: At least four freshly laundered sheets and two freshly laundered binders, a bedpan, two pieces of thin oilcloth (which material is just as good as rubber and much cheaper) about three feet square, a new nailbrush, a fountain syringe, a pound package of absorbent cotton, five yards of sterilized gauze, eight ounces of ethereal soap, and eight ounces of creolin. It is convenient to have your druggist make up packages containing the seven last-named articles and keep them in stock. Then, when the woman engages you for her confinement, she can be referred to him, and you will have the satisfaction of knowing that when you arrive nothing will have been forgotten. One package should always be kept at your office near the obstetrical satchel for emergency cases.

The bowels should be kept freely open, preferably with salines, if it is necessary to administer laxatives, during the whole course of pregnancy, but especially is this desirable during the five or six days immediately preceding confinement. One does not see at first sight, perhaps, how this can come under the head of aseptic measures, but when we reflect that the intestinal contents are swarming with micro-organisms, and that prominent among them is that bacillus whose presence was once supposed to be, if not of benefit to its host, at least innocuous, but which recent observations have demonstrated to be rich in virulent possibilities, the *Bacillus coli communis*, it is obvious that an empty rectum is an extremely desirable element under these circumstances. There are, besides this, other advantages concomitant with an empty rectum which I will not stop to enumerate here, as they do not come within the scope of this article.

When called to the confinement, on arriving at the house we should see to it that there is a good supply of boiling water on the stove. There usually will be, as this is one of the things that the woman's friends almost always think of. If the nurse is an old acquaintance, she will know your ways and have the bed prepared by the time you arrive, and the most convenient way is as follows: On top of the mattress, on that side of the bed over which the delivery is to take place, and a little nearer the foot than the head, spread one of the pieces of thin oilcloth previously referred to, and over this spread one of the freshly laundered sheets. The other piece of oilcloth is then placed over the first and another of the sheets over the whole. During the second stage another sheet should be folded once, passed smoothly under the patient inside the undershirt so that she lies in the middle of it, and the two upper corners pinned together loosely over the stomach. The purpose of this sheet is to take care of the bulk of the discharges occurring during the third stage. Then, when the placenta has been delivered, the sheet enveloping the patient can be removed, the parts cleansed, the top sheet and upper piece of oilcloth removed, and the clean, tired woman is ready for sleep on a fresh and practically aseptic sheet. The upper sheet just removed has, by completely covering it, protected the one upon which the patient is now lying from even a touch.

The first manipulation is palpation of the fœtus through the abdominal walls to determine the presentation and position. Then will usually follow a vaginal examination, and our next step toward the surgically clean conduct of the labor is in preparation for this.

Finger nails should be trimmed closely and scrupulously cleaned. Long, dirty finger nails are an unpardonable abomination under any circumstances, but upon the accoucheur they become a crime. A heaping teaspoonful of the potassium permanganate is thrown into a large teacup, which is then to be half filled with hot water and set aside. Two heaping teaspoonfuls of the oxalic-acid crystals are dissolved in another cupful of hot water and also set aside. Both solutions will be near the point of saturation, and it is essential that the water be hot, not warm. Then prepare about a quart of bichloride solution, 1 to 500, and drop into it a wad of absorbent cotton half the size of an orange.

The coat is removed, the shirt sleeves are rolled up above the elbows, and the forearms, hands, and especially the recesses under the finger nails, are scrubbed with ethereal soap and a nailbrush. Ethereal soap is better than other soaps because it is a more efficient solvent of the fatty and sebaceous matters occurring in the creases of the skin, and without the removal of these thorough aspesis can not be secured. Rinse this off with clean water, and ask some one to pour slowly over your hands and forearms and into a clean dish the permanganate solution while you rub it well into the skin and under the nails. It will stain the hands a deep mahogany color. Then have the oxalic-acid solution poured over forearms and hands and into another clean vessel, and bathe thoroughly in it. It will sting a little, and the dark stain of the permanganate will disappear. Now rinse well in clear water to wash off the acid, and immerse for five minutes in the 1-to-500 bichloride. We are indebted to Professor Welch, of Johns Hopkins University, for this method of asepticizing, and when thoroughly carried out it leaves the hands absolutely sterile.

In the mean time the nurse should have scrubbed the patient's lower abdomen, pubes, insides of thighs, and perineal region, particularly the anus, with ethereal soap and the nailbrush provided by the patient.

Have the bichloride carried to the patient, and with it wash the lower abdomen, etc., yourself, by means of the cotton which had previously been thrown into it.

Unless pathological discharges are or have recently been present we are now ready to enter the vagina. If the woman has unhealthy uterine or vaginal mucous membranes, however, it will be necessary to scrub with brush and three-per-cent. creolin solution the whole vagina as thoroughly, but also as gently, as possible. Healthy vaginal secretions are germicidal of themselves, and I do not think it necessary to asepticize this cavity before the birth of the child unless pathological conditions exist. It is then as much for the child's interests as for the mother's, in that we are lessening very markedly the chances of the development of ophthalmia neonatorum.

The points of antiseptic interest to be gleaned from the vaginal examination are whether the rectum is empty or full, and whether or not there are present any evidences of old tubal inflammations. These should always be looked for, as the fact that you have been called to attend a woman in her "first" confinement does not preclude the possibility of finding an old pyosalpinx, and it is possible for sepsis to develop from this condition through rupture or inflammatory exacerbation when the operator's technique has been perfect. This is a point that is ascertained by careful obstetricians before confinement, by examination during pregnancy when the pelvic dimensions are investigated, but it is not always possible to do this, and is, of course, never so in emergency cases. If anything of the sort is found, it would hardly seem necessary to suggest that the accoucheur use the knowledge only for his own guidance and his patient's benefit. It is ordinarily not best for the other members of the family to know about it, and to constitute himself an executioner of domestic felicity is not a physician's function. If fæces are in the rectum, the mass should be removed with an injection of warm water and soap, and the anus cleansed again afterward with ethereal soap and the bichloride solution.

Having finished the vaginal examination, we proceed to get ready for the delivery. As our hands at this time are perfectly aseptic, it behooves us to be careful where we put them in order to avoid another application of permanganate and oxalic acid, which would consume time that may be valuable. If they become contaminated, however, they must be again religiously sterilized. The forceps, a glass uterine fountain-syringe tip, and a glass vaginal tip; a glass catheter, and the surgical instruments that may be rendered necessary by perineal or cervical rupture; a long uterine dressing forceps, that may be convenient in case we have to tampon for post-partum hæmorrhage; curved needles threaded with sutures, preferably silkworm gut, because it is perfectly sterilized by simple boiling, it will not stretch, and the knots will stay where you tie them; and an extra piece of the suture material, with which to ligate the cord, should be placed in a large dish pan, which can be found in almost any household (if not in your patient's, in that of a near neighbor), and half covered with cold water. Boiling water may then be added gradually so as not to break the glass articles. The dish pan full of instruments and warm water is placed upon the stove where it will boil, and enough of the sodium carbonate is added to make the solution about one per cent. Boil for ten minutes. It may not prove necessary to use all of these articles, but sterilizing does them no injury, and if they are required we have economized time.

In the meantime prepare in the glass instrument tray enough of a three-per-cent. carbolic-acid solution to cover the instruments which are boiling, except the obstetrical forceps, and set the tray aside. Make up a three-per-cent. creolin solution with water that has been boiled, fill your fountain springe, and hang it up in some handy place in the patient's room. Then fill a quart bowl three quarters full of three-per-cent. creolin and immerse therein two pieces of the sterilized gauze, about eighteen inches long by ten inches wide, which will be used later in the preparation of napkins.

These are made by cutting from the roll of absorbent cotton a transverse slice about three inches wide which is placed longitudinally in the centre of the piece of gauze from which the creolin solution has been wrung out, and the ends of the gauze and the surplus portions on the sides folded over the cotton. We then have an aseptic cotton core inclosed in an aseptic and antiseptic envelope, which will absorb the discharges readily, and when used can be burned up without causing the patient any pecuniary loss to speak of. As one napkin is made another piece of gauze should be immersed in the place of that which has been used, so that we shall always have on hand at least one envelope ready for immediate use. Women usually find the pungent odor of creolin agreeable, but sometimes its contact produces an annoying dermatitis, and then three-per-cent. carbolic solution may be substituted.

I will say here that my experience has taught me to consider creolin the antiseptic, *par excellence*, for obstetric use. It is absolutely non-toxic through absorption, kills odors better than anything else that I have ever used, and is an efficient antiseptic. There are but three places where I find it objectionable. One is in the instrument tray, where, by reason of the opacity of its emulsion, the immersed instruments can not readily be found; another is where, by reason of idiosyncrasy, it produces the dermatitis previously mentioned; and the last is where it is necessary to use an irrigating fluid (as in perineorrhaphy), because it hides the parts over which it flows so that the operator can not see to work. Under all of these circumstances three per cent. carbolic may be substituted.

After the instruments have boiled ten minutes they are removed to the glass tray containing the three-per cent. carbolic solution, with the exception of the forceps, which is left in the sterile soda solution, being too bulky for an ordinary tray.

Preparation is now complete, and one should once more scrub his hands with ethereal soap, immerse them for five minutes in the 1-to-500 bichloride, slip into his operating gown, and devote himself to his patient. The bichloride should be kept within easy reach, as it may be necessary to insert a finger into the rectum during the expulsion of the fœtal head, and the vagina should not be entered after that operation until the hand bearing that finger has again made acquaintance with the antiseptic. For a lubricant, when the vaginal secretions will not suffice, I am partial again to creolin, which may safely be used of full strength if desired. It is better not to examine more frequently than necessary, whatever the lubricant. If warm douches are given to facilitate dilatation of the os, they should consist of creolin in boiled water, one per cent. strength, and if version or any other internal manipulation (such as tamponing for post-partum hæmorrhage) is resorted to, the hand or other instrument or material used must be maintained scrupulously aseptic. It may become necessary to use hypodermic injections. If so, the water that dissolves the drug should be sterilized, preferably by distillation, but at least by boiling. The use of common water drawn from a faucet is liable to cause abscesses from the germs it may contain, which, if not dangerous to the victim, are very unpleasant. The last experience I had with ordinary faucet water for this purpose resulted in the production of two abscesses out of ten successive injections in the same patient, and since then I have always carried in my medicine case a four-drachm phial filled with distilled water.

After the child is born and umbilical pulsation has ceased, the cord is tied off with the silkworm gut which we prepared for that purpose and which is in the instrument tray. While waiting for the placenta, I follow the advice of Dr. Grandin, of New York, and wash the infant's eyes with saturated boric-acid solution and irrigate the conjunctivæ with the same. In case any evidences of maternal gonorrhœa are present, it is best to be on the safe side and instill the nitrate-of-silver solution that is in your satchel, two drops into each eye, after first thoroughly cleansing with the boric acid. Leave it in two or three minutes and then irrigate the eyes with the two-per-cent. salt solution. Ophthalmia neonatorum is something that will be carefully avoided by one who has ever had the misfortune to attend a case. The inflammatory phenomena that sometimes follow silver instillation may be pretty severe, but need cause no anxiety, as they will disappear in a day or two.

After the birth of the placenta, if any doubt exists as to its integrity, the uterus must be explored with the aseptic finger and remaining portions brought away. I do not consider a uterine douche necessary unless this procedure is resorted to. Three per cent. creolin in boiled water is the solution to use both for this when necessary, and for the vaginal douche, which should always follow the placental delivery, and for which purpose should be used the sterilized vaginal syringe tip in the instrument tray. The sheet which is pinned about the patient is then removed, the blood-stained genitals and contiguous parts are washed with 1-to-500 bichloride, and the uppermost sheet and piece of oilcloth are drawn from under her. The binder is applied and the toilet completed by placing a gauze-and-cotton pad, prepared as has previously been specified, to the vulva.

The cord is dressed by washing it and its immediate neighborhood with 1-to-500 bichloride and dusting its insertion with aristol. Then cut a hole in a piece of sterilized gauze through which pass the stump, dust it plentifully with the same powder, place another piece of gauze over it, and apply a pad of absorbent cotton over the whole. We can get rid of the stump best through aseptic desiccation. Moist dressings are not conducive to this process and should be discarded. Moisture is, further, an extremely favorable condition for germ development. The stump should be inspected at subsequent visits and the nurse cautioned about wetting or disturbing the dressing when she bathes the infant, or allowing the urinary discharge to soak into it. It is well to be very particular about the cord, as omphalitis is responsible for many cases of tetanus among its other disadvantageous possibilities.

As mastitis is a preventable sepsis, we must protect the breasts before and after each time that the infant nurses, by swabbing its mouth and cleansing thoroughly the mother's nipples with saturated boric-acid solution. In the interim the nipples should be kept covered by a light pad of the sterile gauze.

I am emphatically in favor of vaginal douches of three-per-cent. creolin during the puerperal period. This procedure is said by many who are high in authority to be unnecessary after an aseptically conducted confinement, and stigmatized as dangerously prone to introduce infection into the vaginal and uterine cavities on the improperly cared for nozzle of the syringe and the much-abused nurse's fingers. As to the first objection, I should like to ask who would have the temerity to swear to the perfect efficiency of his technique outside of a hospital and without the assistance of a trained nurse? In private practice the delivery does not take place in a hospital, and in the great majority of cases the general practitioner is obliged to do without a trained nurse. It is especially under these circumstances where he is handicapped, as I have previously intimated, that his duty to his patient requires him to use all available safeguards. If we can not be absolutely sure of our aseptic technique, it is evident that a gate remains open which may give entrance to infectious germs, and if we can not close that gate we should barricade it. The frequently repeated introduction of a judiciously chosen antiseptic fluid into the suspected cavity will barricade the gate pretty effectively. I observe that it is always recommended to begin the use of the douche if the lochia become offensive. Now offensive lochial discharge means sepsis of some kind, and by the time this evidence appears the mischief will frequently have progressed beyond the reach of vaginal douches and we are in trouble. This experience is not an uncommon one among general practitioners, who can not have well-equipped hospitals in which to deliver with the assistance of trained nurses galore, and if the employment of repeated antiseptic vaginal douches during the puerperium were a routine measure, the frequency of its occurrence and that of the pathological conditions of which it is an indication would certainly be reduced.

As to the danger of introducing micro-organisms into the genital tract through the agency of the syringe tip and the nurse's fingers, it will be observed that I have specified a fountain syringe as an article that should be provided by the patient. I think that the objections to the bulb syringe, because of its sepsis-producing possibilities due to the more or less imperfect working of the valves, is well founded. In a gravity syringe, however, there are no valves, and this defect is absent. The nozzle can be cared for perfectly as follows: Before leaving the house prepare, yourself, in the nurse's presence, the three-per-cent. creolin solution to be given, *à la douche*, five hours later, and pour it into the reservoir after thoroughly cleansing the syringe with hot water. Then immerse the nozzle and about a foot of the contiguous rubber tubing in the solution, cover the reservoir with some material that is clean to keep dust out, and hang the filled syringe in this condition in an unused room, or a closet if the family has no spare room. That part of the instrument which comes in contact with the patient will thus sustain an immersion of five hours in an antiseptic fluid before being used, and this is sufficient to render it aseptic. Direct its preparation in this manner immediately after each douche. Then, after informing the nurse in a kindly way and in the patient's presence why you desire her to be particular, instruct her to douche the vagina three times daily at intervals of about five hours. Leave her, in a crockery dish, some 1-to-500 bichloride, cautioning her as to its toxicity, and tell her to wash the patient's genitals with soap and water and afterward with the bichloride (using absorbent cotton for the application) before each douche, and to scrub her own hands and finger nails with brush and ethereal soap, and then immerse in the bichloride for five minutes, before touching the genitals at all.

Now, I have not found monthly nurses uniformly lazy and arrogant. She who is not so will take enough pride in her work to try to carry out the physician's directions in this matter when its importance is explained to her, and she is told how much better her patient is likely to get along than that of her sister who doesn't do these things. Most individuals like to excel their fellows, and where these conditions obtain our obstetrical work will be very satisfactory from an aseptic standpoint. We have explained to the nurse, in the patient's presence, what we want done and why; the patient is interested if the nurse isn't, and will back us up more or less effectively by keeping an eye on our assistant. Even if "Aunty" eludes both our own and our patient's vigilance, we have at least the satisfaction of knowing that we have given the mother a fair start toward recovery, and done our best to keep her in the right road, which we shall not have done if we disregard thorough antisepsis. Our consciences will be quiet. As I have said before, the majority of nurses will try to do as we direct them, and the proportion of total good results attained in the long run will necessarily be greater than if we do not practise routine thorough antisepsis.

In further reference to puerperal douches of creolin I would say that patients using them have almost invariably escaped the feeling of soreness in the genitals which is troublesome to many when they are not resorted to. If they did no further service than this it would surely be worth while to employ them for the sake of the woman's comfort. The lochia also are less profuse, dry up sooner, and almost never become in the least offensive. This is not true of either carbolic acid or bichloride.

When perineorrhaphy has been rendered necessary, and sometimes when no complication has embarrassed the case, the urine will not pass for a number of hours after labor. If it is retained twelve hours, the sterilized glass catheter should be employed to remove it, and the lubricant should be soap. Diluted creolin has not body enough for this purpose, pure creolin will cause the woman pain, and portions of vaseline or other greases are very apt to remain undissolved in the bladder after the catheter is withdrawn. They then act as foreign bodies and are likely to become foci for the formation of calculi, to say nothing of the possible septic inhabitants of an old bottle of vaseline. Before passing the instrument the meatus urinarius should be wiped dry with absorbent cotton.

Still another argument in favor of rigid antisepsis is, that when any of the major obstetrical operations (symphysiotomy, Cæsarean section, etc.) are forced upon us, as they are likely to be in any labor and without any previous warning, an infinitely important element in securing their successful termination is asepsis. I say nothing about the aseptic conduct of these operations themselves, because they are always done by a surgeon who will personally look after the details; but of what use will be the surgeon's carefully observed technique if we have already infected the woman before he arrives, through a neglect of antisepsis, because we are not willing to spend a little extra time and pains upon the case, or because we have not considered that the woman's surroundings offered us a hopeful prospect for the maintenance of the asepsis which we should at least have inaugurated? It may become necessary to carry the woman to a hospital for operation. She will certainly receive proper care there, and if we have done our part in the first place that care will then be effective. If we have not, however, it is merely a case of locking the cage after the bird has flown. I have said "little extra time and pains" advisedly, and because the previously suggested preparatory measures can be carried out easily in three quarters of an hour, after one has once got the successive steps into his mind and been through them two or three times. Of course there do occur urgent cases where we do not have even that much time for preparation, and then we can only do as best we may; but these are infrequent.

The time-honored custom of moving the bowels on the third day is a good one, but it is not quite good enough. The increased vulnerability to infections of the parturient woman is a well-established fact. The rectum will be pretty sure to contain fæces within twenty-four hours, which will be loaded with micro-organisms, some of which are dangerous under certain conditions. They are producing ptomaines which will be absorbed into the circulation if they are allowed to remain in the bowel, and they (*Bacillus coli communis*) have been known to cause fatal toxæmia. Is it not better, then, to remove them beyond the possibility of menace by the harmless procedure of saline catharsis? The presence of a perineal laceration does not contraindicate this, but is, on the contrary, an urgent indication for its employment. With that condition infection from bowel contents is facilitated by the destruction of tissue integrity in immediate proximity to the thriving germ colonies. They might not be so very likely to migrate through healthy untorn mucous membrane, but they will be extremely likely to invade an inviting solution of its continuity. Therefore let us forestall the development of headache, restlessness, other uncomfortable concomitants of a loaded rectum, and possibly of something much more serious, by administering a saline laxative within twenty-four hours after labor is completed, and see to it that the bowels functionate with a proper degree of frequency thereafter. After each movement of the bowels the perineal and anal regions should be cleansed with soap and water and the bichloride solution, for at least a week after confinement, and, if perineal laceration is present, until the parts have entirely healed.

If one is attending an erysipelas, diphtheria, scarlet fever, or any other infectious case and is called to a confinement, it will be necessary, in addition to the previously outlined technique, to change the clothing throughout and to wash thoroughly, at least the face, hair, beard, neck, and arms, with hot water and soap before going near the patient. If this can not be done, it is better to refuse the case altogether. The experience of a vast majority of observers demonstrates the existence of a connection between childbed fever and erysipelas, diphtheria, etc., and we should never allow ourselves to be so overburdened with work that we have not time to do every bit of it properly. I do not recommend an antiseptic fluid for bathing under these circumstances, because if germs are present they would be loosely attached, and therefore easily removed by the soap and water. Contact with a germicidal solution, of a strength that would be used for this purpose, would not kill them in the length of time they would be exposed to its influence, so that in the end we should only secure the benefit of a bath after all.

Many a man who reads these paragraphs will look back over a succession of ten or fifteen happily terminating obstetrical cases, conducted in the happy-go-lucky, careless, old-fashioned way, and on the strength of these will cry out against my advocacy of a thorough technique. I would remind such a one of the old legend about the pitcher which went so many times to the well, but was finally broken. Your eleventh or sixteenth case will be extremely likely to cause you regret for your neglect. We do not judge of the efficiency of a therapeutical measure by its results in a few cases, but by observations in a large number. Any one is likely to have a group of cases of any disease which will terminate well under any, or for that matter without any, treatment, but these will certainly be followed by a reactive and oppositely characterized group. For this reason, he who is enjoying the season of felicity should not arrogantly underrate the precautionary pains of his more careful and prudent colleagues, and superciliously stigmatize them as "unnecessary," "hair-splitting," or "airish." His Waterloo is surely coming, and if he is wise enough to comprehend and appreciate the unfortunate probabilities with which his unreformed future is pregnant, he will surely be merciful to his patients and mend his ways. As I have said before, even if his adoption of obstetrical asepsis is effective in saving but one woman's life or health, it is imperatively his duty to save that one, and, as we can never tell which one is going to sustain the danger, the only proper and safe course is to be thorough and conscientious in the management of every woman who confides her life and future health to our care. Let us prevent puerperal sepsis, and not be driven to attempt its cure.

To facilitate the digestion of the foregoing matter I will conclude this article by summarizing, in the order of their performance, the different heads under which the various procedures constituting the aseptic conduct of a confinement occur.

Preparation of the bed.
Initial and complete disinfection of the hands.
Disinfection of the patient.
Vaginal examination.
Sterilization of instruments and preparation of armamentaria.
Final disinfection of the hands.
Conduct of the labor.
Care of the infant's eyes.
After-care of the patient.
The cord-dressing.

EXPERIMENTS WITH THE LABORDE METHOD OF RESUSCITATION.

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The Laborde method of resuscitation consists in rhythmical tractions on the tongue, about eighteen to twenty a minute in number, continued for a variable period of time, and in case of necessity persisted in for an hour or more. This method is reputed to have been of service in cases of submersion, and in those cases where respiration and even the heart cease action during the administration of chloroform or ether.

At the suggestion of Professor Austin Flint the following experiments were made, in which I was ably assisted by Messrs. Newman and De Mund.

Experiment I.—A medium-sized dog was quickly killed with a considerable amount of chloroform administered by inhalation. As soon as it was made certain that the heart had ceased its action, the animal's tongue was seized firmly with the fingers covered by a towel to prevent slipping, and rhythmical tractions were made. This was continued for two hours. The result was negative; not at any time during the treatment was there the slightest evidence of an attempt at respiration, nor was there any other evidence of return of animation. This experiment was deemed a severe test of the possible usefulness of the method, as a large amount of chloroform was rapidly administered, and the fact was borne in mind that chloroform acts primarily upon the heart.

Experiment II.—A medium-sized dog was submerged in water for fifteen minutes. The animal ceased struggling at the end of one minute and ten seconds. Upon removal from the water the dog was placed on the table and, after it was ascertained that life was extinct, tractions were made on the tongue as in Experiment I. Again there was no result whatever.

Experiment III.—Two dogs of about the same size were simultaneously submerged for three minutes and a half. Upon removal from the water one dog was left to himself as a control of the other which was to undergo tongue tractions. The animal to be treated was placed upon the table and two minutes allowed to elapse, in order to make certain that life was extinct. Then tongue tractions were made and continued as in Experiment I. Neither of the animals showed any signs whatever of re-establishment of function, and this experiment also was negative in result.

Experiment IV was practically a repetition of Experiment III, two dogs being used, one as a control of the other. But no result was achieved in this case, although both animals struggled to within fifteen seconds of the time when they were removed from the water. Indeed, restricted muscular tremor was present in both animals for some minutes after they had been removed from the water. While this muscular tremor is of no particular significance, it might, perhaps, be fairly assumed that very little "stimulus" to the heart or respiratory centre would have been sufficient to arouse functional activity.

Experiment V.—In this case an effort was made to imitate the phenomena attendant upon death from chloroform inhalation as it occurs in the administration of this agent for anæsthesia. A good-sized adult dog was chloroformed, and after anæsthesia had been produced the chloroform was slowly increased until respiration ceased. Now the chloroform was discontinued, nor was any of it given subsequently. With the phonendoscope it was determined that the heart was still acting, and it continued to do so more or less irregularly until, at the end of one minute and forty-five seconds after the cessation of respiration, it stopped entirely. Tongue tractions were immediately begun and continued for an hour. There was absolutely no result whatever.

It will be seen from the foregoing observations that the method of resuscitation was given tests of considerable variance as regards severity. While it is true that in Experiment I a large amount of chloroform was administered, and in Experiment II the animal was submerged for fifteen minutes (a considerable period of time), still, in face of the contention by Laborde that persons that have been submerged for an hour have been resuscitated by this method, these tests would seem to be fair enough. But further than this, it will be seen that in Experiments III and IV the animals were submerged for three minutes and a half, and then left to themselves for two minutes, making a total of five minutes and a half only, and still resuscitation was not achieved. Indeed, in Experiment IV there was the muscular tremor already alluded to; surely here resuscitation should have been successful. And last of all, Experiment V, it seems, can well be called a fair test. Without recapitulating the entire observation, attention is called to the fact that tongue tractions were begun *immediately* after the heart ceased acting, and that no time was allowed to elapse as in the other observations. As a matter of fact, the observations here recorded leave little doubt that the Laborde method of resuscitation leaves much to be desired, and that it is not to be employed to the exclusion of the other methods now in use.

140 EAST SEVENTY-SECOND STREET.

Therapeutical Notes.

Camphorated Naphthol in the Palliative Treatment of Sarcoma.—At a recent meeting of the Société médicale des hôpitaux (*Journal des praticiens*, December 15, 1896) M. Fernet presented an actor, forty years old, on whom M. Trélat had operated ten years before for a sarcoma of the left testicle. Four years later the man had come back with all the signs of a mediastinal tumor—intense dyspnœa from compression of the trachea, distention of the veins of the upper part of the thorax, and compression of the superior vena cava. There was very pronounced enlargement of the cervical and suprasternal lymphatic glands, with a mass which dipped into the mediastinum. M. Fernet made a few injections of camphorated naphthol into the glands of the neck, and then others, as the first were well borne, into the mass which showed itself above the sternum. The man was almost completely relieved, so that he was able to continue his work for six years. Four months before the meeting, the trouble reappeared in a mitigated form, without any signs of tracheal compression, and M. Fernet injected camphorated naphthol into the mediastinum nine times (the amount not stated), and the trouble disappeared.

A Remedy for Recurrent Epistaxis.—Rendu (*Gazette des hôpitaux*, 1896, No. 24; *Wiener medizinische Blätter*, December 24, 1896) recommends that the following mixture be taken several times a day in obstinate cases of frequently recurring epistaxis occasioned by vascular tumors of the skin or mucous membrane:

℞	Antipyrine	7½ grains;
	Tannin	15 "
	Sugar	3 drachms.

M. The bleeding is said to be controlled on the first and almost entirely stopped by the third day.

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THE ORIENTAL PLAGUE.

While our positive knowledge of the so-called "bubonic plague" at present raging in Bombay is very limited, we may gather much from an address that was recently delivered before the London Epidemiological Society by Dr. James Cantlie, of the Charing Cross Hospital Medical School, late of Hong Kong, an abstract of which is published in the *British Medical Journal* for January 9th.

In the first place, Dr. Cantlie properly criticises the term "bubonic" as not really applicable to the disease. The so-called bubo of plague, he says, can in no sense be regarded as a sympathetic swelling, but merely as the outcome of a blood poison. He defines the plague, or "malignant polyadenitis," as he proposes to call it, as an acute febrile disease of an intensely fatal nature, characterized by inflammation of the lymphatic glands, marked cerebral and vascular disturbances, and the presence of a specific bacillus.

Two forms of disease are at present prevailing in the East. One of them is the malignant plague named by Dr. Cantlie malignant polyadenitis, and the other is a much milder disease known as the "ambulatory plague," or *pestis minor*. The malignant form has a short period of incubation, not longer than from two to six days, whereas that of the minor variety may be much longer, and, in fact, is as yet undetermined. The mild variety may turn into the malignant form, that is, be followed by it. This fact is about the only cause that may possibly lead to a distant and rather rapid spread of the disease. The malignant plague is the slowest-traveling of all epidemic diseases—it took ten months to extend from Hong Kong to Macao, a distance of thirty miles. In the present century its habitat seems to be a belt corresponding about to the latitude of Mesopotamia, with a greater tendency to spread eastward than in any other direction. Therefore, notwithstanding the fact that there was recently a notification of two or three cases of the mild variety as having occurred at the Seaman's Hospital in Greenwich, among the seamen of a vessel that had arrived from Bombay, it should be an easy disease for the sanitary authorities to keep out of a country.

It seems that Kitasato's bacillus is found in each form of the disease, but Dr. Cantlie supposes that the bacillus, or diplobacterium, of the mild variety, although the same organism as that which gives rise to the malignant form, has lost more or less of its toxic property. This same bacillus is found in the soil where the virulent plague is raging, but cultivations of the soil bacillus do not seem to be destructive to the rat, an animal that is killed in great numbers by the plague. The rat seems to bear some mysterious relation to the spread of the plague. Herbivorous animals do not become infected casually, but they may be infected experimentally by causing them to swallow plague-infected food or cultivations of the bacillus.

The plague is most apt to break out after a famine, when the people are compelled to gather their grain before it is ripe, when it is apt to be musty, covered with blue mold, and fermented, and the disease rages most violently when great numbers of people are compelled by the rainy season or by cold weather to crowd together within their filthy houses. It is comparatively easy to stamp out the plague if an outbreak is met early with energetic measures, but when it has reached the proportions of the present epidemic in Bombay it is pretty sure to run its course, no matter what may be done to control it.

THE *LANCET* AS AN AGENCY OF CHARITY.

The part played by the proprietors of the *Lancet* in promoting the establishment and maintenance of the Hospital Saturday and Sunday Fund is almost as well known here as it is in the United Kingdom. They have now undertaken a charitable enterprise which seems to be supplementary to the work of the Society for the Relief of Widows and Orphans of Medical Men. In the advertising pages of its issue for January 9th, our contemporary announces the establishment of the *Lancet* Relief Fund for the benefit of members of the medical profession and their widows and orphans when in distress.

Annually, in the month of January, an amount of at least £300 will be provided by the proprietors of the *Lancet*, and the fund administered free of cost, for the purpose of affording immediate pecuniary assistance to medical men or their widows or orphans in cases of distress and emergency, by the grant of money by way of loans free of interest or by that of gifts, as the circumstances may require. A board of almoners has been constituted consisting of the president of the Royal College of Physicians of London, the president of the Royal College of Surgeons of England, the president of the General Medical Council, Mr. Thomas Wakley, and Mr. Thomas Wakley, Jr., with Sir Henry Pitman, M. D., as honorary auditor.

Applicants must satisfy the almoners that they are qualified under the following regulation: "The recipients shall be such persons as satisfy the almoners that they possess one or other of the following qualifications—that is to say: (*a*) That the applicant holds a registered medical qualification, and that he has fallen into pressing need of immediate pecuniary relief; or (*b*) That they are persons who have been, previously to the date of application, legitimately dependent upon some person holding a registered medical qualification, and that they have pressing need of immediate pecuniary relief."

An application should be accompanied by two separate testimonials, one from the clergyman of the parish or some other resident minister of religion, and one from a registered medical practitioner, stating that the application addressed to the almoners has been read, stating how long they have known the applicant, and stating that they believe the application to be perfectly truthful and such as may be acted upon without further inquiry. A blank form of application is furnished on which the applicant is expected to state the nature of the emergency that has arisen; the circumstances out of which it has arisen; the amount of the grant desired and whether by way of loan (free of interest) or of gift, and, if by way of loan, the time when the loan will be repaid and the source from which the funds to repay it are expected to be forthcoming; whether the applicant is entitled or able, under the circumstances that have arisen, to look to any other source of assistance, and, if so, the expected nature and amount of such assistance; whether the applicant is receiving, or has received during the preceding six months, pecuniary aid from any medical charity; and how the applicant is qualified to receive assistance under the regulation quoted. The application is to be confidential.

It is easy to see that by means of this fund numerous instances of real distress among deserving persons may be relieved, and the regulations are such, we should say, that it would be difficult for the almoners to be imposed upon. We look upon the undertaking as an outgrowth of pure philanthropy and as exceedingly creditable to the proprietors of the *Lancet*, but we hope that not many of our British brethren will find themselves in such straits as to have to resort to the fund.

THE ACADEMY OF MEDICINE'S SEMICENTENNIAL.

On Friday evening, the 29th inst., the New York Academy of Medicine will celebrate the completion of the first fifty years of its existence. The exercises, which are to be held in Carnegie Hall, will include an invocation by the Right Rev. Bishop Potter; an address by Dr. Joseph D. Bryant, the president of the academy; addresses by two of the founders of the academy, Dr. Thomas M. Markoe and Dr. Lewis A. Sayre; an oration by Dr. Abraham Jacobi, an ex-president of the academy; and an address by the President of the United States. After the formal exercises, there will be a reception in the academy's own building, on West Forty-third Street. We are glad to see that the engraved announcement is embellished with a head of Hippocrates that is a notable improvement on the lugubrious portrait of the sage of Cos that has heretofore figured on the academy's stationery.

In the half-century of its existence the academy has achieved much, especially within the last twenty-five years. It has reason to look forward with confident expectation to even a greater measure of success in the future. It is a subject for special congratulation that two of its founders should be able to take part in the celebration. We are sure that the speeches will be worthy of the occasion and that the reception will afford abundant enjoyment to the fellows of the academy and their friends.

MINOR PARAGRAPHS.

THE CITY BOARD OF HEALTH'S PURPOSES WITH REGARD TO TUBERCULOUS DISEASE.

The report by Dr. Biggs and Dr. Prudden, which we publish elsewhere in this issue, will probably meet with the acquiescence of the New York profession in the main. From the scientific point of view, there can, we feel sure, be no dissent from the recommendations contained in it. When legislation comes to be asked for in furtherance of the plan, however, we hope it will be borne in mind that we have at present an exceptionally discreet board of health in New York, one that could safely be trusted to administer almost any legislative enactments prudently and with sense. There is perhaps, on this very account, some danger that powers will be conferred on the board that, as it may be constituted at some future time, it would not use with the same amount of humanity and common sense. We do not expect any such course of events, but it will be wise, we think, to keep the possibility of it in view. In particular, no authority should be given to the board to remove a tuberculous patient to a hospital without his or her free consent, or the consent of the parents in the case of a child. Probably the present board has no desire for such authority.

THE IMMUNIZING PROPERTY OF THE BLOOD OF EELS AGAINST SERPENTS' VENOM.

It is stated in the *Gazette hebdomadaire de médecine et de chirurgie* for January 7th that M. Physalix expressed the opinion, at a recent meeting of the Académie des sciences, that the blood of eels, which is very poisonous, should contain antitoxic substances. On heating the blood to 131° F., he succeeded in destroying the toxic substances. This blood was afterward injected into guinea-pigs, and it protected them from the action of serpents' venom. It was necessary, however, that the immunizing injection should always be made several days before the inoculation of the venom, in order that the immunization should be complete.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 19, 1897 :

DISEASES.	Week ending Jan. 12.		Week ending Jan. 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	5	17	5
Scarlet fever	153	13	165	10
Cerebro-spinal meningitis	2	1	4	3
Measles	159	7	156	5
Diphtheria	266	27	284	32
Croup	8	6	9	8
Tuberculosis	128	127	188	103

Reviews of Medical Books.—The *Journal of the American Medical Association* for January 16th has a leading article deploring some of the faults of medical book reviewing and pointing some directions in which it might be improved. The article closes with the following paragraph, which we heartily indorse :

"A difficulty from the editorial standpoint is the necessity of committing volumes consigned to the large journals for review to other hands. Although editorially responsible for the review columns of his journal, for many obvious reasons the editor can not personally inspect the books sent to him. Generally the volume is presented to the reviewer, and when a severely critical or objectionable review is returned the editor is often compelled to expurgate or publish in full the passages in question without being able to consult a duplicate. This is manifestly unfair to both author and reader, and is an injustice to the honest labor of the reviewer. It would be better for all concerned if the publishers would adopt the French custom of sending two copies of the volumes for review to the larger journals, one copy to be used for critical inspection and one for editorial reference."

A Fire at Bellevue Hospital Medical College.—Early on Wednesday morning a fire broke out in the top story of the college building. The dissecting-room floor and part of the floor below were burned out The rest of the building was flooded with water. All the records of the college, however, are safe. The course went on as usual this morning at nine o'clock and will not be interrupted, but will be completed in the Carnegie Laboratory and in the hospital. The lecture room in the laboratory is large enough. Fortunately, the dissecting for the session has been practically completed. The college building will be promptly restored.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Pathology, on Tuesday evening, the 19th inst., a large aneurysm of the aorta was to be exhibited by Dr. De Lancey Rochester ; other specimens were also to be exhibited by Dr. E. P. Lothrop and Dr. H. E. Hayd.

The Craig Colony for Epileptics.—We learn that Dr. L. Pierce Clark has been promoted to be first assistant physician.

Changes of Address.—Dr. E. R. Chadbourne, from New York to Hotel Green, Pasadena, California (until May 1st): Dr. H. M. Silver, to No. 5 East Forty-third Street, New York.

The Late Professor William H. Pancoast, of Philadelphia, who died on the 4th inst., at the age of sixty-four years, had long been prominent in the profession of Philadelphia. He was the president of the faculty of the Medico-chirurgical College.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 9 to January 16, 1897 :*

Benham, Robert B., Captain and Assistant Surgeon, is retired from active service by reason of disability.

Harvey, Philip F., Major and Surgeon, is granted leave of absence for two months, to take effect on or about January 18, 1897.

Merrill, James C., Major and Surgeon, is granted leave of absence for one month.

Swift, Eugene L., Captain and Assistant Surgeon. The leave of absence granted him on surgeon's certificate is further extended two months.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending January 16, 1897 :*

Bradley, C. P., Surgeon. Ordered to examination for promotion.

Hibbett, C. T., Surgeon. Detached from Norfolk Navy Yard and ordered to the U. S. Steamer Independence.

Olcott, F. W., Passed Assistant Surgeon. Detached from the U. S. Steamer Independence on reporting relief, and ordered to the Puget Sound Naval Station.

Russell, A. C. H., Surgeon. Ordered to the U. S. Steamer Lancaster.

Tryon, J. R., Medical Inspector. Ordered to examination for promotion.

Wise, J. C , Medical Inspector. Relieved from duty at the Museum of Hygiene.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen Days ending January 15, 1897 :*

Bailhache, P. H., Surgeon. Detailed as chairman of board for examination of officers for promotion and candidates for appointment as assistant surgeon. January 4, 1897.

Stoner, G. W., Surgeon. Detailed as member of board for examination of officers for promotion and candidates for appointment as assistant surgeon. January 4, 1897.

Kalloch, P. C., Passed Assistant Surgeon. Detailed as recorder of board for examination of officers for promotion and candidates for appointment as assistant surgeon. January 4, 1897.

Cofer, L. E , Assistant Surgeon. Relieved from waiting orders and directed to proceed to San Diego, Cal., and assume command of service. January 11, 1897.

Gardner, C. H., Assistant Surgeon. To report at bureau, February 3, 1897, for examination for promotion. January 6, 1897. Granted leave of absence for fifteen days on completion of examination for promotion. January 11, 1897.

Blue, Rupert, Assistant Surgeon. To report at bureau, February 3, 1897, for examination. January 5, 1897.

Oakley, J. H., Assistant Surgeon. To report at bureau, February 3, 1897, for examination for promotion. January 5, 1897.

Sprague, E. K., Assistant Surgeon. To report at bureau, February 3, 1897, for examination for promotion. January 5, 1897.

Prochazka, Emil, Assistant Surgeon. To report at bureau, February 3, 1897, for examination for promotion. January 5, 1897.

Society Meetings for the Coming Week:

Monday, *January 25th:* Medical Society of the County of New York; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association; Boston Society for Medical Improvement.

Tuesday, *January 26th:* Medical Society of the State of New York (Albany—first day); New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Medical Society of the County of Putnam (quarterly), N. Y.; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *January 27th:* Medical Society of the State of New York (second day); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *January 28th:* Medical Society of the State of New York (third day); New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Massachusetts, Society for Medical Improvement (private); Pathological Society of Philadelphia.

Births, Marriages, and Deaths.

Married.

BALL — BRUMFIELD. — In Magnolia, Louisiana, on Wednesday, January 6th, Dr. Jesse Ball and Miss L. Brumfield.

CURTIS—STAGE.—In Le Roy, N. Y., on Wednesday, January 13th, Dr. D. E. Curtis and Miss Anna C. Stage.

PITKIN—MORSE.—In New York, on Tuesday, January 19th, Dr. Lucius Pitkin and Miss Maude Livingston Morse.

Died.

DOTY.—In Duck Hill, Mississippi, on Saturday, January 9th, Dr. J. J. Doty.

FOY.—In Dallas, Texas, on Friday, January 8th, Dr. James M. Foy.

GREENE.—In Middletown, Connecticut, on Saturday, January 9th, Mrs. M. J. Greene, wife of Dr. Nathaniel Greene, of Boston.

JACKSON.—In New Orleans, on Friday, January 15th, Dr. James T. Jackson, in the sixty-first year of his age.

JANEWAY.—In Bermuda, on Friday, January 15th, Dr. Thomas T. Janeway, of New York, in the thirty-seventh year of his age.

LEGGETT.—In Flushing, N. Y., on Sunday, January 17th, Dr. Ellen C. Leggett.

SULLIVAN.—In Pawtucket, Rhode Island, on Monday, January 18th, Dr. Daniel H. Sullivan, in the twenty-eighth year of his age.

Letters to the Editor.

ANTIPYRINE AND CALOMEL.

238 EAST 105TH STREET, NEW YORK, *January 19, 1897.*

To the Editor of the New York Medical Journal:

SIR: I have read with interest Dr. William J. Robinson's criticism of my article on antipyrine and calomel, appearing in the number of the *Journal* for December 5th, and feel under the necessity of making reply.

In his preliminary remarks the doctor declares that I have drawn conclusions from false premises—hence, necessarily, erroneous ones. The conclusion in particular here referred to is, if I mistake not, that neither drug recognizes the presence of the other in the economy (it being taken for granted in this proposition that no change in composition resulted from the admixture of these drugs prior to ingestion). To this Dr. Robinson replies: We do not at all maintain that the mercur*ous* is converted into the mercur*ic* chloride *in the economy.* It is *before it* (the combination of antipyrine and calomel) *enters* the economy . . . while lying in contact in the charta or capsule that the reaction takes place.

In an account of the original experiments of Dr. Werner, kindly furnished me by Messrs. Merck & Co., the statement is made that this change occurs *in the stomach,* this fact being arrived at by crude attempts to reproduce in the laboratory the conditions present in that organ during the febrile state: no statement whatsoever is made that this change takes place as a result merely of the mechanical contact of these chemically stable substances. A corollary of this would naturally be that were a physician to write for antipyrine and calomel, the pharmacist would fill his prescription by dispensing a capsule or powder containing these drugs with bichloride in addition; whereas, the original contention is to the effect that corrosive sublimate is generated only when these drugs are deposited in the stomach.

Thus we see a marked and important discrepancy in the statements of "those who are in position" to know—viz., Dr. Robinson and Dr. Werner.

Further, Dr. Robinson contradicts himself when he makes the assertion that he does not fear to give antipyrine and calomel five minutes apart, "because," he goes on to say, "they would not be '*intimate*' *enough* in the stomach to react." In other words, if exhibited with a briefer space of time intervening, *they would react in the stomach*—which is in direct contravention of his statement made a few lines above, "We do not at all maintain that the mercurous is converted into the mercuric chloride *in the economy.*"

Even if given five minutes apart, it is my belief that they could come in contact with each other. In the febrile state, two conditions always obtain—viz., hepatic torpor and depression of the central nervous system; as a result of the former, circulation in the gastric mucosa is impeded, and of the latter, owing to imperfect innervation, the muscular extrusive movements of the stomach are impaired—hence absorption is necessarily retarded and the drugs would therefore become "intimate."

I have thus, I believe, established the justice of my premises.

The doctor intimates that I have slurred authority. In reply to this, I wish to ask: Is it not strange that such authorities as Wood, Bartholow, and Biddle fail to make reference to the incompatibility of the drugs in question? Why have these writers, even in the edition of their works published within the last decade, failed to take cognizance of this fact, and to call the attention of the profession to it?

Dr. Robinson states that one thirty-second of a grain of bichloride may be given *even to an infant* without injurious results; whereas the *maximum* dose for a *child two years of age,* according to Biedert, is one thirty-third of a grain, three times daily. If it is true that bichloride is evolved by the interaction of these drugs *in the stomach,* then I have observed no toxic effect of one thirty-second of a grain, administered to children every two hours—which fact is rather difficult to reconcile with the statement made by Bartholow on page 275 of his work on *Therapeutics,* that children are readily poisoned by mercurials.

The statement is made by Dr. Robinson that toxic symptoms are manifested in *some* cases, consequent upon the administration of this combination—"it may not happen in every case." "I have seen in cases where the idiosyncrasies of the patients rendered them particularly susceptible to the action of calomel" (Wood), "symptoms developed on the exhibition of ten to fifteen grains of this drug alone, which closely assimilated bichloride intoxication. May not these cases be explained by the fact that owing to certain conditions of the stomach wherein an excess of chloride is present, the proto- is converted into the deutero-chloride, and absorbed as such?" (Mialte).

B. S. Roseneau, A. B., M. D.

A CASE OF DELIRIUM TREMENS TREATED WITH CHLORIDE OF AMMONIUM.

Independence, Mo., *December 16, 1896.*

To the Editor of the New York Medical Journal:

Sir: In your *Journal* of November 21st I noticed the treatment of delirium tremens with chloride of ammonium as given by Dr. Gilbert G. Cottam. I have a case to report. Some time ago I was called to see Mrs. ——, a lewd woman. She had been on a drunk for eight days, and just before I saw her had had the usual reptile hallucinations. I found her very restless, moving incessantly, and by force she was made to stay in bed. At once I sent to a neighboring drug store for a drachm of chloride of ammonium, but before getting it she was beginning to get more excited and seeing "snakes." As soon as I got the ammonium I at once gave her half a drachm in a large quantity of water—four ounces—and had her drink it in one or two gulps. In fifteen minutes she was quieter, and in fifteen minutes more I gave her the other half drachm. In a short time she was asleep and slept for six hours. She awoke feeling much better and had no more trouble. I should not hesitate to give a drachm and repeat the dose in half an hour if the patient was not better.

W. Bourne Gossett, M. D.

Book Notices.

A Treatise on Surgery. By American Authors. For Students and Practitioners of Surgery and Medicine. Edited by Roswell Park, A. M., M. D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, etc. Volume II. Special or Regional Surgery. With Four Hundred and Fifty-one Engravings and Seventeen Full-page Plates in Colors and Monochrome. Philadelphia and New York: Lea Brothers & Co., 1896. Pp. 7 to 804.

A review of the first volume of this treatise has already appeared in the columns of this *Journal.* It closed with the statement that, "if in the general presentation of the subjects the same standard is maintained in the second volume, the work will undoubtedly receive the generous indorsement of the profession."

In general it may be conceded that this has occurred, and that the book will receive the approval of medical men.

It is to be regretted, however, that the editor has not contributed more of the subject matter of the second volume, which deals particularly with the practical side of the subject, and where Professor Park's brief but accurate descriptions, his logical deductions, his careful and far-seeing judgment, as well as his well-defined indications for treatment, would be appreciated by the general practitioner.

His consideration of the subject of surgical diseases and injuries of the head is masterly, and will undoubtedly impress most readers as being the most complete and satisfactory chapter in the second volume.

A careful reading of the other chapters convinces us that, in the main, the editor's selection of the various authors has been judicious.

The work of Dr. Bradford on the spine, of Professor Dennis on the chest, of Dr. Richardson on the abdomen, of Dr. Lovett on orthopædics, and of Dr. Gerster on plastic surgery are especially to be commended. In each of these chapters the inquiring student or practitioner will surely find what is needed to assist him in the diagnosis and treatment of his cases.

One fault, however, always found in a treatise of this kind, by a number of authors, is that the subjects overlap to such an extent that certain conditions fail to receive the attention they deserve, while others are treated carefully by two or more writers. This fault has been to a large extent avoided in this work. One or two examples, however, occur. The subject of malignant tumors of the nasopharynx and tonsil seems to us to have been too hastily dismissed. It is generally recognized to-day by the majority of surgeons that these growths rapidly lead to a fatal termination unless extirpated in the most thorough manner, and many operations have been devised and carried out to this end. Yet we look in vain for any description of these procedures and are disappointed to find the subject of treatment in these conditions summed up in a few lines describing the use of the wire snare through the nose or mouth. It is not improbable that the author was laboring under the impression that these operations would be described in another part of the work. The subject of Ludwig's angina, on the other hand, is taken up by two authors—one devoting three lines to its description, another somewhat more space, but neither giving us a clear idea of its character or of its dangers.

A few typographical errors, due to careless proofreading, are found, chiefly on page 119, in the description of the symptoms due to injury of the median and ulnar nerves. Figs. 190 and 191, on pages 426 and 427, have evidently been changed about, and might lead to a mistaken impression of Bassini's operation.

Taken as a whole, this treatise has much to recommend it. In the majority of instances the subjects are well handled, and by thoroughly competent men.

Manual of Diseases of the Ear, including those of the Nose and Throat in Relation to the Ear. For the Use of Students and Practitioners of Medicine. By Thomas Barr, M. D., Lecturer on Diseases of the Ear, Glasgow University, etc. Second Edition, entirely revised and extensively rewritten. With Two Hundred and Twenty-nine Illustrations. New York: The Macmillan Company, 1896. Pp. xxiii–415. [Price, $3.50.]

Some twelve years have elapsed since Dr. Barr first published his manual on the ear, a work which has always held its place among the best books obtainable on this subject. This new edition emphasizes more strongly still our high esteem of the author as a writer and practitioner. There is indeed but little similarity between the present edition and the former. The new work is larger by three additional chapters, the illustrations have been greatly improved and doubled in number, and the entire book has been rewritten and revised. Dr. Barr has a very happy way of expressing himself and his views, and the general scheme of this work is most excellent and practical. The author handles his subjects in a concise, clear manner, enabling the reader to obtain the information he desires easily, quickly, and comprehensively. In a review of this scope it is impossible to take up each chapter successively and discuss its contents. We must confine ourselves to that which strikes us as the more important portions of the work.

The new Chapter II, on symptomatology (wherein are considered the symptoms of ear disease in the following order: Disturbance of hearing, subjective sounds in the ear, discharge from the ear, pain in the ear, vertigo, sickness and vomiting, abnormal sensations in the head, disturbance of the sensorium, pyrexial symptoms, disturbance of sight, smell, and taste, nasal and throat symptoms), is a valuable addition and will well repay careful perusal. The treatment of the nose and throat in relation to the ear also receives special attention in a chapter by itself. In the descriptions of purulent disease of the ear and its consequences, the completeness of the revised edition is shown, the subject being handled in accordance with the rapid strides of recent years. The operations on the mastoid and tympanic attic are fully described, with all the developments and improvements of the times.

The most important addition to Dr. Barr's work, however, is, in our estimation, the new Chapter XIII, in which the intracranial and vascular infective complications of purulent inflammation of the middle ear are treated of in a masterly manner. So great has become the interest on this subject during the past few years, and so important the knowledge gained from operative procedures on the cranium in cases of cerebral and cerebellar abscess, leptomeningitis, pachymeningitis, and septic thrombosis of the sinuses, that the reader will not fail to profit by careful study of this part of the work under consideration. As the author says, "The record of work during the past seven years in the operations for cerebral and cerebellar abscess has been remarkable. At least fifty-nine cases of cerebral and seven cases of cerebellar abscess have been thus successfully treated. Many of these were associated with septic thrombosis of the sigmoid sinus, some with meningitis."

The practitioner will find in Chapter XV much to profit by in the treatment of non-exudative catarrh of the middle ear. The pathology, causative influences, symptoms, prognosis, treatment, etc., are laid down in a practical, lucid, and thorough manner, without the exhaustive, useless, theoretical details which usually characterize writings on this subject. The anatomy and physiology of the internal ear and the diseases of this portion of the organ of hearing are well described and ably discussed. Tinnitus aurium and deaf-mutism each receive attention in a chapter by themselves, and an appendix is added with remarks on otalgia and the nervous and vascular supply of the ear. For the convenience of students and young practitioners, there is given a list of formulæ of remedies recommended in the course of the work, which concludes with an index of authors and a small bibliography of their more important works and papers.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, Member of the Academy of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Leon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1896. Part V. Pp. 113 to 137. [Price, $3 each part.]

Though the fuel brought to the burning "ringworm question" by Sabourand, of Paris, has not yet enabled everybody to see it in the complete light he sees it in, still, by far the most important, fullest, and most conclusive contributions toward settling it have been made by him. To this Part V of the *Pictorial Atlas of Skin Diseases* he contributes an article on this subject entitled Agminate Trichophytic Folliculitis, or Kerion Celsi, one of the forms of "ringworm" due to a trichophyton of animal origin (*Trichophyton ecothrix*). The species of trichophyton which produces agminate trichophytic folliculitis, he says, is that which has the horse for its usual habitat, and this is the reason why this form of trichophytosis occurs almost exclusively in grooms, coachmen, butchers, etc. Pringle, of London, comments upon this point and says that in England kerion is very common upon children's heads and in association with *microsporon*. The same, we say, has been observed in this country, but not commonly. Occasionally the disease has been observed upon the scalp of adults.

The other articles contributed to this number are principally interesting from the beauty of the accompanying plates, which are again up to the usual standard of excellence of this *Atlas*, to which, however, some of the plates of the previous number could hardly be said to have attained. They illustrate "lupus pernio," papulo-tuberculous syphilides, dermatitis vacciniformis infantilis, and the acute ecthyma of infancy. The elaboration under these two last titles of two types of a disease into distinct morbid entities is peculiarly French. They are both forms of *staphylococcia* due to permanent contact of filth in which the pathogenic agent develops. The name "ecthyma" is now generally regarded as a superfluous designation of certain aspects that the lesions of contagious impetigo assume, and is practically obsolete except in France.

Skeletlehre. Bearbeitet von Professor Dr. J. Disse, in Marburg, Professor Dr. Graf Spee, in Kiel, Dr. Mehnert, in Strassburg, und Professor Dr. Pfitzner, in Strassburg. Abteilung II. Kopf. Von Professor Dr. Graf Spee, in Kiel. Mit 102 teilweise mehrfarbigen Original-Holzschnitten. Jena: Gustav Fischer, 1896.

This installment of Professor Bardeleben's extensive system of human anatomy embraces the osteology of the head, by the eminent anatomist and embryologist, Professor Dr. F. Graf von Spee. In its three hundred and seventy-two pages it contains a vast array of minute detail and far surpasses in its exactness any similar publication with which we are acquainted. Cross sections of the various bones of the skull at different levels give additional value to the numerous illustrations, which are mainly woodcuts made from careful drawings. The technical terms have each a list of synonyms, and we observe the tendency recently started in Germany to give German names instead of Latin ones to anatomical elements, an attempt like that of the late Professor Leidy, of Philadelphia, so far as English terms are concerned.

Medicine and Kindred Arts in the Plays of Shakespeare. By Dr. John Moyes, Largs Fellow of the Faculty of Physicians and Surgeons, Glasgow. Glasgow: James MacLehose & Sons, 1896. Pp. xiv–123.

This is one of those literary gems which the physician who troubles himself with other than purely therapeutic matters will find most charming reading. The author, unfortunately, has not lived to see the fruit of his labor, but kind friends have supervised the publication of the book, and Dr. Finlayson has written a pleasing preface.

The author, who must have been a good student of medical history as well as a thorough reader of Shakespeare, gives us the medical lore in the plays of the great dramatist, with a running commentary on each selection. Physiology and pathology, medicine and surgery, materia medica, therapeutics, and toxicology, venereal diseases and obstetrics are the headings of the chapters. Aside from the literary value of the book, it is surprising to learn how well Shakespeare was acquainted with the medical controversies and medical lore of his day. An extensive bibliography of Shakespearean medicine is appended to the book.

The Surgery of the Chest. By Stephen Paget, M. A. Oxon., F. R. C. S., Surgeon to the West London Hospital, etc. Illustrated. New York: E. B. Treat. Bristol: John Wright & Co. Montreal: J. Hood Company, 1896. Pp. x–479.

In the publication of this treatise, Mr. Paget has given to the profession not only the results of his own personal work and observation in the surgery of the chest, but also an excellent *résumé* of the progress which has been made in this department of surgery from the earliest times.

The first chapter is devoted to surgical landmarks and a description of the various congenital malformations. Following this are ten chapters in which the different traumatic conditions of the thorax requiring surgical treatment are considered, including fracture of the ribs and sternum, surgical emphysema, pneumothorax, and wounds of the lung, the heart, the diaphragm, and the intercostal and internal mammary vessels.

In the second part of the work, the various surgical diseases of the chest are described and the indications for treatment clearly defined.

Three chapters are devoted to the consideration of empyema, and in no work, medical or surgical, have we been able to find this important subject more ably treated. The chapters on abscess and gangrene of the lung, on foreign bodies in the air-passages, and on the surgery of the pericardium and heart show conscientious work, logical reasoning, and sound surgical judgment. The addition of a chapter on subphrenic abscess and the diagnosis of this from other intrathoracic diseases adds much to the value of the book.

Taken as a whole, the work is one of the most useful treatises on special surgery which have appeared in several years.

In addition to its scientific value, the book has decided literary merit. The author's style is easy, graceful, and charming. As an example of English composition it is far superior to the generality of medical works.

Compressed-Air Illness, or So-called Caisson Disease. By E. Hugh Snell, M. D., B. Sc. Lond., Diplomate in Public Health of the University of Cambridge, etc. London: H. K. Lewis, 1896. Pp. viii–251. [Price, 10*s.* 6*d.*]

The author has taken advantage of the opportunity afforded him in his capacity as medical officer in charge of the employees in the compressed-air work carried on at the Blackwall Tunnel to record his observations for the benefit of medical science.

There is a review of the history of compressed air, employed as a working atmosphere, an account of the physiological and pathological observations that have been made, and a description of the Blackwall Tunnel. It is stated that the rules adopted by the contractors to prevent accidents are similar to those used during the caisson work at the Brooklyn Bridge.

A chapter is devoted to the clinical histories of some fifty patients, and a subsequent chapter gives a summary of symptoms caused by compressed air. The latter were similar to those heretofore recorded by other observers, though the author states that the cases of paralysis met with at the tunnel were very few and trivial compared to those recorded at the St. Louis and the Brooklyn bridges.

He takes exception to the term "caisson disease," which he regards as a misnomer; he believes that the amount of illness varies directly with the lack of ventilation of the compressed-air chamber and that "rapid decompression" is not a primary factor in the causation of the illness. He reviews and criticises the theories of the pathology of the malady. The author inclines to accept the theory that the illness is due to an increased solution by the blood of the gases of the compressed air, and the liberation of these gases on the pressure being removed.

The work is a comprehensive review of the condition and is a useful addition to the literature of the subject.

The Diseases of the Male Urethra. By R. W. Stewart, M. D., M. R. C. S., Surgeon to Mercy Hospital, Pittsburgh, Pa. New York: William Wood and Company, 1896. Pp. viii–221. [Price, $2.50.]

In the introduction to this work, the author states that it will be his object to "place before the reader the diseases of the urethra as viewed from the modern standpoint."

Had the book been published five or six years ago, this would undoubtedly have been the case; but it seems to us surprising that even the most conservative of surgeons should publish as modern the treatment for acute urethritis outlined in this treatise. To rely upon balsams (if the stomach will tolerate them) until the stage of decline, then to employ simple astringent injections or a weak solution of nitrate of silver once in two or three days, and in case this fails to effect a cure to abandon all treatment, can hardly be regarded at the present time as *modern* treatment.

In preparing a text-book on this important subject, one can not afford to ignore the careful work of Janet in Paris or the work of Swinburne and a host of others in this country.

It is as unwise and unreasonable to blindly follow the older authorities in the treatment of acute urethritis as it is to accept the views formerly held by equally eminent writers on the subject of gleet and stricture which Dr. Stewart so emphatically condemns.

The chapters on chronic urethritis and stricture are well written and express the opinions now held by the best American genito-urinary surgeons. The dangers of internal urethrotomy are, however, somewhat overestimated.

In view of the recent investigations which have been made of the diseases of the seminal vesicles by Fuller and others, it is surprising that the author did not devote more attention to this important subject.

The work is well written and conveniently arranged, but in our opinion would have been far more satisfactory had the views upon some subjects been somewhat more up to date.

Report of the Commissioner of Education for the Year 1894 to 1895. Volume I, containing Part I.

As usual, this report embodies valuable articles and statistical material. Among the papers in this volume are those discussing education in European countries, American medical schools, the Chautauqua system, and the old-field schools of Georgia, and a short sketch on English text-books on the American Revolution.

Miscellany.

The New York City Board of Health and Tuberculous Disease.—The following communication, dated January 11th, has been sent by Dr. Hermann M. Biggs, pathologist and director of the board's bacteriological laboratories, and Dr. T. Mitchell Prudden, the board's consulting pathologist, to the Hon. Charles G. Wilson, the president of the board, and has been approved by the board:

Nearly eight years ago the Health Department of the City of New York took its first steps in the education of the people regarding the communicable and preventable character of pulmonary tuberculosis. At that time this view of the nature of tuberculosis was held by only a very small proportion of the medical profession; now it is not only the universal conviction of the medical profession, but also a widespread belief among the laity, that pulmonary tuberculosis results solely from the transmission of infectious material from the sick to the well, and is wholly preventable.

It is a little more than three years since the board determined that the time had arrived when more energetic measures for the prevention of this disease could be properly taken, and adopted resolutions requiring the notification of all cases occurring in public institutions in this city; the inspection of premises in tenement house districts, the instruction of the occupants, when reported as suffering from tuberculosis, and the renovation, when required, of all rooms or apartments occupied by consumptives which had been vacated by death or removal. The board also at this time offered to assist physicians, free of charge, in the diagnosis of cases of suspected tuberculosis by the microscopical examination of the sputum.

The action of the health department in relation to this disease has always been as nearly abreast of the knowledge furnished by the most advanced scientific investigations as was practicable, and the methods adopted in the past have been followed by the most encouraging results.

The department has cause for extreme gratification in the marked increase in intelligence and care, especially among the poor, which is observed in the presence of this disease, as the direct outcome of its conservative and educational policy, and in the proportionate curtailment of the danger and the suffering incident to it. During the past twelve years there has been a reduction in the general mortality from all tuberculous diseases of more than thirty per cent. in New York city.

But the time has now arrived, we believe, when more comprehensive and radical measures should be adopted to rapidly and materially diminish the prevalence of pulmonary tuberculosis in this city.

Some idea of the enormous sanitary importance of the subject is obtained by reference to the records of the department showing the reported cases and deaths during the past year. Nearly 9,000 cases of tuberculosis were reported to this department, and nearly 6,000 deaths resulted from this disease. It is conservatively estimated that at least 20,000 cases of well-developed and recognized pulmonary tuberculosis now exist in this city, and an additional large number of obscure and incipient forms of the disease. A very large proportion of the former cases constitute more or less dangerous centres for infection, the degree of danger depending, in each instance, upon the intelligence and care which are exercised in the destruction of the expectoration. It may be safely assumed that from the failure to safely dispose of the sputum of consumptives, from thirty to fifty inhabitants of this city daily become infected by tuberculosis, and of these about one half later die from the disease. All this suffering and death, in view of modern scientific knowledge, we know to be largely preventable by the efficient enforcement of simple, well understood, and easily applied methods of cleanliness, disinfection, and isolation.

The knowledge now at command regarding the methods of extension of pulmonary tuberculosis entirely justifies the belief that its ravages can as certainly be limited by proper sanitary control and appropriate treatment as can other infectious diseases, more acute, more dramatic, and more readily communicated, but at the same time far less prevalent, less fatal, and incomparably less important to the welfare of the community. We fully believe that with proper regulations tuberculosis may be restricted within the narrowest bounds and eventually, perhaps, almost exterminated. This is not the idle dream of sanitary enthusiasts or theorists, but is a conviction founded upon the most thorough and conclusive experimental investigations, which have been amply confirmed by practical experience.

In order to make possible such restriction in the prevalence of this disease, it is necessary that the health department shall assume a more complete and comprehensive control. This requires, first, the adoption of such measures as shall make possible the general sanitary supervision of pulmonary tuberculosis under well-defined conditions and regulations, differing in many respects from those applied to other more readily communicable diseases; second, the possession of such facilities for the care of the poor suffering from it as shall make possible the removal, when necessary, of those who are dangerous sources of infection.

From the beginning of this work the officials of this department have encountered, in the utter lack of proper facilities for the care of consumptives, an obstacle to practical success so great and so disheartening that we feel impelled to urge our conviction that the grave responsibilities which rest upon the health department in this matter can not longer be adequately sustained without the immediate establishment, under its direct control, of a hospital for the care and treatment of this disease. No week passes in which the officials of this department do not encounter instances in which the members of many households, numerous inmates of crowded tenement houses, employees in dusty and unventilated workshops, and many others, are exposed to imminent peril from victims of this disease, to whom the doors of our overcrowded public institutions are closed, or who reject all proffered assistance and instruction, and, from ignorance, indifference, or inability through weakness due to the disease, scatter infectious material broadcast, and thus diminish their own chances for recovery and imperil the health and safety of others. In such cases the sanitary suggestions of the health-department inspectors are now futile, and effective action impossible. We are convinced that no other factor is so potent to-day in perpetuating that ominous death list from pulmonary tuberculosis as the lack of proper facilities for the care of the poor of this city stricken with this malady.

The best medical opinion forbids that persons suffering from pulmonary tuberculosis be treated in association with other classes of cases in the general medical wards of general hospitals. This opinion is based on the daily observation that consumptives, when occupying hospital wards in common with other classes of cases, not only constitute a serious source of danger to other patients, but are themselves placed under peculiarly unfavorable conditions. This is an opinion which the former action of this board has done much to establish and extend. It has very properly resulted in the exclusion to a large extent of persons suffering from this disease from many of the general hospitals to which they were formerly admitted.

The special hospitals for the treatment of pulmonary tuberculosis now existing in this city are not free public hospitals, and are quite unable to meet the demands upon them by the poor. Much larger numbers than formerly of this unfortunate class of sufferers are forced to seek admission to the already overcrowded institutions of the Department of Public Charities, as other doors are closed to them; so that further provision for them must, of necessity, be made by the city. These patients appeal for care at all stages in the course of the disease, but, as a rule, seek for admission to the hospital only when suffering with well-developed or advanced forms of consumption.

The Department of Public Charities is not able to provide separate accommodations, excepting to the most limited extent, even for these advanced cases, and, as a result, actual isolation does not exist in any of the municipal institutions. In every one of the institutions of the Department of Charities and the Department of Corrections consumptives are found occupying beds in the general wards of the various hospitals; associating with healthy prisoners in the cells and in the greatly overcrowded work-rooms of the workhouse and the penal institutions. Many of these persons, as we know from careful investigation, are sources of actual danger to their associates. No precautions whatsoever are taken with regard to the expectoration in many instances, and everywhere the precautions taken are utterly insufficient.

A communication has been referred recently to this board by the honorable commissioner of correction regarding numerous cases of pulmonary tuberculosis which exist in the workhouse, with the inquiry whether this department could not, in some way, care for them. An investigation has shown that there are many cases of pulmonary tuberculosis among the inmates of the workhouse; that these are, in part, in the hospital wards, and, in part, among the well inmates in the sewing and workrooms, which are badly ventilated, dusty, and excessively overcrowded. It was found that in these rooms there were no sanitary provisions whatsoever in regard to the expectoration, and the most favorable conditions existed for the transmission of the disease.

Over twenty-two hundred cases have been reported to this board as admitted during the past year to the various institutions under the charge of the Department of Charities, and nine hundred cases in addition have been treated in the various dispensaries under the charge of that department.

As the health department has already declared its conviction that pulmonary tuberculosis is a communicable disease, and has taken steps looking toward its prevention, and as the information at hand shows that it is far more fatal than any other communicable disease with which the board has to deal, and destroys each year more lives than all the other communicable diseases together, it would seem self-evident that some efficient and far-reaching measures should be at once adopted to protect the inhabitants of this city from its further ravages.

The importance of provision for the separate care of persons suffering from other forms of communicable disease has long been universally admitted, and the maintenance of separate hospitals for these diseases is justly recognized as one of the most effective of the sanitary measures for securing public safety. There are most urgent reasons why similar measures should be adopted in dealing with pulmonary tuberculosis.

A large experience in this matter has shown that in institutions devoted solely to the care of consumptives the general welfare of the patients is more easily fostered, the risks of fresh infections more certainly diminished, and the chances for recovery more surely enhanced than in general hospitals in which all classes of cases are received.

We believe that such an institution in charge of the Health Department would secure all these advantages, without encroaching in any way upon the province of the institutions now caring for such patients, and would contribute as no other measure can to the success of the endeavor of the department now pursued in the face of hopeless obstacles to curtail the ravages of pulmonary tuberculosis in New York.

There is no disease with which we have to deal in which our knowledge justifies more completely the conviction that it is absolutely preventable and that it can be stamped out by the efficient enforcement of simple, well understood, and easily applied measures of cleanliness, disinfection, and isolation. These measures, furthermore, involve no hardship to the individual; and when we recall that even with a reduced death-rate, nearly six thousand persons died during 1896 in this city from tuberculosis, the vital importance of the subject is evident.

We would, therefore, respectfully recommend:

First: That such action be taken by the health board as seems necessary and proper to at once secure the provision of hospital accommodations, under its charge, for the care of the poor suffering from pulmonary tuberculosis who, as active sources of danger to the community, may properly come under its supervision.

Second: That an amendment be made to the sanitary code declaring that tuberculosis be officially considered a communicable disease, and formulating regulations under which its sanitary surveillance shall be exercised.

Third: That all institutions in this city which admit and treat cases of pulmonary tuberculosis be subjected to regular and systematic inspection by officials of this board, and that specific regulations be established for the conduct of such institutions, in accord with the proposed amendment to the sanitary code.

Fourth: That the scope of the measures designed for the education of the people in regard to the nature of pulmonary tuberculosis and the methods to be taken for its prevention be enlarged, and a closer sanitary supervision be maintained over individuals suffering from this disease in the densely populated tenement districts and in the crowded workshops and public buildings of this city.

Hyperleucocytosis and the Natural Resistance to Disease.—Dr. Martin Hahn, of the Hygienic Institute of the University of Munich (*Berliner klinische Wochenschrift*, September 28, 1896), remarks that Buchner has shown that the process of resistance can not be explained as a simple phagocytosis, for the exudates lose naught of their antibacterial power when the leucocytes are killed by freezing and then thawing out the liquid. We could not, therefore, be dealing with a phagocytic function of the organized cell; it must be rather the decomposition or secretion products of the leucocytes which impart a greater antibacterial energy to the exudate as compared with blood serum. It is clear that these observations are significant in their bearing on the views which determine the theory and practical treatment of the infectious diseases. The fact that the leucocytes, where they occur in greater number, impart to the medium, presumably through the products of secretion, an increased antibacterial energy suggests the thought that we may possibly augment by artificial process the natural resistance of the human organism, which, in the main, is identical with the antibacterial energy of the blood. Of course it is not to be expected that every increase in the number of leucocytes will possess the same value in increasing the antibacterial action. The kind, origin, biological condition, etc., of the leucocytes will be important factors. Thus, it is not to be supposed that leucæmic blood is a more energetic opponent of bacteria than normal blood, or that an old sero-purulent pleuritic exudate is particularly rich in alexines. Assuming that the amount of leucocytes contained in the liquid is the primary factor influencing this antibacterial energy, we have two paths open to us. First, a larger quantity of antibacterial substances—alexines, we will say—may be introduced into the human organism by injecting leucocytic liquids produced in another animal. Secondly, the reserve fund of resisting power in the human being may be turned to account in a measure for the artificial production of hyperleucocytosis, provided the alexines circulating in the blood are thus really augmented. The first method did not seem very promising at the outset; Buchner showed long ago that the alexines of different species of animals destroyed each other. More recent experiments made in this direction by Professor Buchner with mixtures of human blood and dog's blood, as well as the blood of sheep and horses, have again demonstrated that the natural resisting powers of the human being are scarcely to be augmented by the introduction of liquids rich in alexines—for example, the fresh pleuritic exudate of the sheep.

The other method, the production of hyperleucocytosis in the human subject, has given greater promise of success. The literature of the subject embraces a number of isolated investigations which showed that it is possible to influence favorably, and even to cure, a severe and otherwise deadly animal infection by the production of hyperleucocytosis.

Indubitable results were obtained only when experiments on dogs were begun. Blood was first withdrawn from the animals, the number of leucocytes in the arterial blood being counted, and they were then given subcutaneous injections of agents that stimulated leucocytosis. For this purpose albuminoids are commonly employed, such as albumose or nuclein, the latter in the form of a yeast nuclein solution, placed at our disposal by the firm of Parke, Davis, & Co. We likewise obtained good service from a nucleinic acid which was given by the same firm. Since large quantities of such preparations may be administered to the dog, though they commonly cause local irritation, it is very easy to double the original number of the leucocytes in a short time. This is usually accompanied with a rise of temperature, varying according to the agent used. In the dog the rise in temperature rarely exceeded a degree to a degree and a half. When the number of leucocytes has risen to double the normal, blood is withdrawn a second time. While at first we waited five or six hours before the second bloodletting, we afterward permitted an interval of from twelve to fifteen hours to elapse between the injection and the second bleeding. If by that time the leucocytosis has receded somewhat, the results are not affected at all. The result of the experiments, of which the following will alone be cited as illustrative of the others, in which the leucocytosis was produced by the injection of nucleinic acid, was perfectly clear.

The defibrinated blood, obtained in the stage of hyperleucocytosis, exerted a decidedly more energetic antibacterial action than the normal blood of the same animal. This is sufficient to show that in the dog a decided increase in antibacterial energy may be effected by the production of hyperleucocytosis. It would seem unquestionable also that in dogs the course of infections may be very favorably influenced by artificial hyperleucocytosis.

As has just been remarked, a favorable action is to be expected from hyperleucocytosis, first, only in those cases where the bacteria do not remain localized and cause mischief by their toxines, but rather where they really pass into the circulation. In this respect the above-cited results of increased energy always exerted by the blood rich in leucocytes, when tried with the staphylococci, is of decided significance.

It has been shown that in the human subject, quite in harmony with the animal test, a decided increase is to be registered in the energy of the blood rich in leucocytes. The investigations are naturally not to be regarded as completed, so far as the human subject is concerned; it is very difficult to find individuals who are suited to such experiments in every way. It will hardly be possible, even in future experiments, to avoid many failures. But in view of the results thus far obtained, we may say at least: It is highly probable that the antibacterial potency of human blood depends substantially on the number of leucocytes, and that it will be possible to augment the natural resisting power of the human subject through artificial hyperleucocytosis.

Of course, artificial hyperleucocytosis will not favorably influence all bacterial affections, as has been indicated already. With respect to diphtheria, it seems to be almost established that a persistent increase in the number of leucocytes is not to be regarded as a favorable symptom—a fact which certainly calls for further explanation. And the case will be similar in other infections where the bacteria remain localized and exert their harmful action, not by their direct presence in the blood, but rather by the toxines they produce locally, as in cholera and tetanus. Here we have less to do with the problem of destroying living bacteria—the only action thus far observed in hyperleucocytosis—than to deal with the problem of conferring immunity against the toxines. Here, then, antitoxic-serum treatment must continue to occupy the foreground of clinical interest. But very different is the situation with respect to the so-called septicæmic infectious processes. The results thus far obtained in the treatment of the most familiar form of septicæmia—anthrax—by passive immunization with serum are by no means brilliant, despite varied and extended experiments. At all events, they are far inferior to those obtained from immunization with attenuated cultures. And a similar state of things seems to prevail with respect to the streptococcic serum. Accordingly, in those infectious processes due to the presence of bacteria in the blood we have still left to us a field for immunization with attenuated cultures, and for cure by elevation of the natural powers of resistance. This cure is, prospectively, to be achieved by the artificial production of hyperleucocytosis.

Geosote.—This substance is described by Dr. Rieck, of Bassum (*Deutsche Medizinal-Zeitung*, December 24, 1896), as the valerianic-acid ester of guaiacol, a yellowish, oily liquid of the specific gravity of 1.037, but slightly soluble in water, but readily soluble in acid and alkaline liquids, in alcohol, in ether, in benzene, and in chloroform. It has a sweetish and smoky odor and a sweetish taste passing into a slight bitter, unaccompanied by burning and not persistent. Applied to the skin and covered with gutta-percha tissue, it is rapidly absorbed and causes no irritation. Injected subcutaneously in amounts of from fifteen to thirty grains, it causes transitory burning and does not give rise to general symptoms. If the injection is thrown into a diseased part, slight œdema with a sensation of heat may result and persist for a few days.

Geosote is given internally in three-grain gelatin capsules. It is said not to disturb the stomach in any way when given in doses of from fifteen to forty-five grains and used continuously for months, and not to give rise to the eructations occasioned by creosote—that is, Dr. Rieck has known it to cause eructations in only one instance, and in that case there was gaseous distention of the stomach to begin with. He says he has given as much as seventy-five grains a day without giving rise to any unpleasant effects. He has found it useful in chlorosis, acute gastric and intestinal catarrh, tuberculosis, and articular rheumatism.

The Ascites of Young Girls.—Under this name, says M. G. Bouilly in the *Gazette médicale de Paris* for December 26th, Cruveilhier described a variety of ascites which is produced during puberty or during the years following it, and ranked it among the idiopathic forms of ascites. In this affection, in reality, the intraperitoneal effusion may seem to constitute the entire disease; it often appears without premonitory troubles, and after a time more or less extended, during which it may undergo variations in quantity, or remain stationary, it is capable of becoming absorbed and of disappearing. This affection, which Cruveilhier is said to have observed rather frequently, seems scarcely to have been noticed by other writers; Besnier seems to have doubted its existence and demanded fresh observations in order to establish this interpretation on acceptable proofs.

In 1893, the author, basing his theory on a certain number of cases in which laparotomy was done, in which the operation did not enable him to recognize and to treat the lesions, developed the idea, with proofs to support it, that this variety of ascites observed in young girls and young women should be connected with tuberculosis of the Falloppian tubes and ovaries and, consecutively, of the peritonæum. He states that he has been able to ascertain that this ascites is symptomatic of a genital tuberculosis; of a true local tuberculosis of the deep genital organs which spreads more or less to the peritonæum according to the intensity and the age of the lesions. Since that time M. Bouilly has done several operations which have only confirmed this opinion in which, simultaneously with ascites, and in the absence even of circumuterine symptoms, he found a more or less advanced tuberculosis of the tubes and of the peritonæum.

The presence and the quantity of effusion, he says, are not connected with the abundance and the extent of the tuberculous invasion of the peritonæum; there may be found an abundant intraperitoneal effusion with a tuberculosis as yet localized in the tubes, in the ovaries, and in the neighboring peritonæum; according to the author's observations, it is also in this form of tuberculosis limited to the annexa and to the true pelvis that the better characterized and the most abundant ascites is met with; it is with this form of lesion that the disease described by Cruveilhier generally corresponds, although that eminent author was not able to connect this production of liquid with its true cause.

In the cases, on the contrary, in which the entire peritoneal cavity is invaded by the tuberculous process, more frequently the ascites is absent; the peritoneal cavity no longer exists; correctly speaking, it is filled with adhesions which agglutinate the intestinal coils to each other and to the abdominal wall. Besides, the peritonæum, infiltrated with confluent granulations, seems to lose its property of liquid secretion and exudation. M. Bouilly does not dwell on this dry form of tuberculous peritonitis, the clinical evolution and appearance of which, he says, differ so entirely from the tuberculosis which is localized in the annexa and in the true pelvis and is accompanied by ascites. He states that he has not seen any but this particular form, the ascitic form, in a torpid and slow evolution, which is capable of being developed in an apparently healthy subject and without producing for a long time much change in the usual mode of life. This form is characterized clinically by the development and the presence of an intraperitoneal effusion which has for the most part the general characteristics of ascites; and, anatomically, by tuberculosis of the annexa and a more or less extensive tuberculous invasion of the neighboring peritonæum. The abdominal effusion is easy to ascertain, if it is not easy to recognize its nature and its location; the genital lesions may pass altogether unperceived.

The age of the patients, the disturbances of the general health, the amenorrhœa, and the fact that some painful and occasionally febrile attacks may precede or accompany the enlargement of the abdomen and the production of the liquid should be considered as important elements in the diagnosis in favor of ascites of tuberculous origin in the annexa.

Generally, says the author, palpation is hardly painful; in a few cases only it arouses pain in the lateral parts, on the borders of the uterus, and in the region of the annexa. Vaginal examination usually does not furnish any information, but abdomino-vaginal palpation may reveal on the sides and behind the uterus indurations and tumefactions the presence of which is of the greatest value in the diagnosis, and enables the physician to connect the peritoneal effusions with the lesions of the annexa. But these perimetric symptoms may be absent, and their establishment is not indispensable in order to affirm the diagnosis of symptomatic ascites from tuberculous invasion of the annexa and of the peritonæum. The location gives rise to tubal lesions, and the presence of the liquid sometimes prevents the discovery of these lesions; but in all the cases of ascites of this nature in which the author has employed laparotomy, the lesions have always been present.

M. Bouilly remarks that he can not indicate in an absolute manner the progress of this affection if left to itself; in two cases he has seen the liquid spontaneously absorbed under the influence of a general medical treatment and of revulsion continued for a long time on the abdominal wall. In one case, after a simple puncture, the liquid was not reproduced, but the patient continued to suffer, and a few years later she had to undergo a laparotomy for the removal of a large tube which was fillled with tuberculous pus and covered on its surface with granulations; in all the other cases M. Bouilly has employed surgical intervention. In another article on this subject he will deal with the surgical treatment of this affection, and its results.

Atropine as a Means of Mitigating Certain Inconveniences of Quinine.—In the *Lyon médicale* for January 3d there is an article on this subject by M. P. Aubert, who calls attention to a new employment of atropine in the correction of several inconveniences caused by quinine.

Among the symptoms which are produced by the administration of quinine, even in doses of from six to eight grains, the most frequent are buzzing and ringing in the ears, a sound like that of rushing water, deafness, vertigo, and headache. In certain cases these symptoms are rather accentuated, and the patients refuse to continue the use of the quinine.

M. Aubert relates the histories of three cases of neuralgia in which he was able to attenuate to a very great degree, and even to suppress, these disagreeable symptoms by the addition of a small dose of atropine sulphate. From five to seven grains of quinine were given at a time, and to each dose the author added 0.007 of a grain of atropine sulphate. In one case this prevented the disagreeable symptoms, and in the two others greatly moderated them. The periodical pains were allayed, and no appreciable symptom of atropinism was experienced.

M. Aubert states that he has not had occasion to use larger doses of quinine, and does not know what the results would be with larger quantities. These facts, however, seem to be worthy of being called to the attention of physicians, as he is not aware that atropine has before been employed for the purpose of mitigating the disagreeable symptoms provoked by quinine.

Coryza and the Nocturnal Spasmodic Cough of Young Children.—The *Indépendance médicale* for December 30th contains an abstract of an article from the *Journal de clinique et de thérapeutique infantiles* for December 17, 1896, in which the writer states that M. Gaston has dwelt upon the frequency and the gravity of coryza in young children, and shown that the nocturnal spasmodic nauseating cough is often due to a posterior coryza, and he has cited four personal observations as a proof. When the child is in bed with the head thrown back the mucosities produced by the coryza reach the pharynx and the larynx, fall on the arytænoid regions and the vocal cords, and cause a reflex which provokes spasm of the glottis and suffocation. Aside from this spasmodic cough, and accompanied by nausea, M. Gaston says that the following symptoms may also be provoked:

1. Cerebral symptoms, for example, even meningitis, particularly syphilitic coryza, which leads to the formation of a true purulent process which is a point of departure of many ascending and descending infections. 2. The production of adenoid growths, which are oftener the consequence of coryza than the cause, the secretion of the coryza irritating the mucous follicles of the posterior wall of the pharynx, which becomes hypertrophied and constitutes true lymphatic tumors of inflammatory origin. 3. Purulent otitis with catarrh of the Eustachian tubes and deafness. 4. Spasmodic laryngitis; false croup, stridulous laryngitis, spasm of the glottis, and sometimes œdema; chronic laryngitis with hoarseness and attacks of dyspnœa, which are occasionally fatal, as in syphilis. 5. Simple or febrile catarrhal bronchitis and broncho-pneumonia. 6. Digestive troubles arising from swallowing the secretions, such as saburral deposits on the tongue, vomiting, anorexia, diarrhœa, and fœtor of the stools.

As a treatment, says the writer, M. Gaston recommends nasal irrigations with Weber's siphon, or else the introduction three or four times a day into the nostril of a tampon of absorbent cotton saturated with vaseline and boric acid. This produces sneezing at first, but afterward, becoming accustomed to the contact of the cotton, the child inhales the vaseline, which penetrates the nasal fossæ as far as the pharyngeal cavity.

To the vaseline astringent substances, such as tannin and alum, may be added in amounts varying according to the age; antipyrine is also especially recommended.

M. Gaston states that the nasal fossæ should always be cleared; that that is the essential point of the treatment.

The Influence of Traumatism on the Manifestation of Gout.—In an article on this subject in the *Progrès médical* for January 2d M. Cornillon says that traumatism is often the direct cause of rheumatism, but exceptionally that of gout, although it is not rare to see attacks of this latter affection following violence. The author does not think that shock has the power to create entirely one or the other of these two diatheses. In order to give them birth there must be a predisposition on the part of the subject, and its rôle must be to render apparent a disease before latent; and it is an important one, for without its intervention the patients would be free for a long time, and perhaps always, from intolerable and repeated suffering, which are not always without danger to the patient's life.

M. Cornillon gives the histories of three cases, of which the following is an example: On August 6, 1893, a man fell from a carriage, and, although there were no fractures or luxations, he remained in bed or confined to his room for a month at least, as the contusions were so extensive and deep. In November he resumed his usual occupation, and shortly afterward an attack of gout appeared in the hands and shoulders, as well as in the other articulations which had been bruised in the fall. There was very little tumefaction or pain, but it was impossible for the patient to make a movement. The attack lasted about six weeks, and left a partial ankylosis of the articulations of the digits of each hand, except the thumbs, which remained free throughout. From this time the patient could not close the hands entirely, and some painful nodes were found near the articulations of the terminal with the middle phalanges.

Under the influence of douches and massage the movements gradually returned; nevertheless, three years after the accident occurred the patient was not able to bend the index finger into the palm of the hand.

The Treatment of Chronic Appendicular Inflammation.—In the *Gazette médicale de Paris* for January 2d M. Pierre Sebileau remarks that the future of any person who is cured or appears to be cured of an acute attack of appendicular inflammation offers the three following forms: 1. Definitive and to a certain degree extemporaneous recovery, without pain or consecutive troubles, and without risk of relapse. 2. Definitive recovery supervening only after a period, more or less extended, of local pains, also without risk of relapse. 3. Temporary recovery, followed at intervals more or less extended by a relapse. There is, then, evidently recurring and non-recurring inflammation, and if it is impossible to establish the proportional frequency of the two, there are three fundamental propositions which may be affirmed: First, in order to establish the improbability of a relapse, we must not rely upon the benignity of the first attack; secondly, the benignity of the first attack does not in the least prevent the gravity of the second attack; finally, between the two attacks there may often exist a period of perfect health, but, in a large number of cases, some symptoms, such as pain, indigestion, etc., impress the patient, to a certain degree, with a feeling of coming danger during this period. These, says M. Sebileau, are the clinical elements on which to base the treatment, which he divides as follows: First, since, in a certain number of cases, the surgeon may, from particular indications, predict with slight chances of error the return of the symptoms, the patient should be advised without hesitation that the only thing capable of warding off the probable danger is resection of the ileo-cæcal appendix in the interval, the dangers of which are not at all in proportion to the possible gravity of a fresh attack, which may assume the form of an acute perforating inflammation, as well as that of a simpler appendicular colic. For this reason an operation is advised. Secondly, since in many cases there are no clinical indications to enable the physician to foresee an appendicular relapse, the comparative importance of the chances of a return and the gravity of it, on the one hand, and the dangers of removal of the appendix on the other hand, should be weighed in the balance. Regarding the estimated gravity of the relapse, the author's advice is to look at things in the worst light, as it is obvious that it is the severe cases which must be taken into consideration. Physicians, then, should be of one accord on a principal point, although it always remains to make a comparison between the chances of a relapse and the gravity of the operation.

M. Sebileau's conclusions concerning this affection and its treatment are as follows: 1. All patients who have suffered from an attack of undoubted inflammation of the appendix, even slight, should have the appendix removed, for it is very rare that an appendix which has been affected ever completely recovers. 2. When a patient has had several attacks—for the chances of relapse increase with the number of preceding attacks—or when he presents symptoms the totality of which denotes appendicular inflammation, an operation must be advised without hesitation. 3. When, on the contrary, there has been only one attack, and the patient's health seems to be excellent, it is well for the physician, while referring to the benefits of surgical treatment in case of a second attack, to speak of the dangers also, and to place both sides of the question fully before the patient, although without undue pressure, in order that he may take his own risk concerning the mode of treatment, thus relieving the physician to a certain extent of the responsibility.

The Medical Society of the State of New York.—The ninety-first annual meeting will be held in Albany on Tuesday, Wednesday, and Thursday, January 26th, 27th, and 28th, under the presidency of Dr. James D. Spencer, of Watertown. The provisional programme includes the following titles: Two Cases of Acute Intestinal Obstruction from Foreign Body, with Operation, by Dr. C. Wilmot Townsend, of New Brighton; Excision of the Coccyx for Fracture and Necrosis, with a Report of Three Cases, by Dr. Edward N. Liell, of New York; The Fitting of Glasses, by Dr. M. L. Foster, of New York; A Contribution to the Study of Cough Due to Irritation of the Upper Respiratory Tract, by Dr. Charles N. Cox, of Brooklyn; A Consideration of Prolapsus Uteri, with Special Reference to its Radical Treatment in the Aged, by Dr. Andrew F. Currier, of New York; Some Disease of the Alimentary Canal in the Light of its Development and Ancestry, by Dr. Woods Hutchinson, of Rochester; Some Unusual Causes of Cough, by Dr. Emil Mayer, of New York; Fancies and Facts in our Work, by Dr. Joseph Eastman, of Indianapolis; The Correction of Depressed and Saddleback Deformities of the Nose by Operations Performed Subcutaneously, without the Aid of Metallic or other Artificial Supports, by Dr. John O. Roe, of Rochester; Gauze Drainage in Surgical Gynæcology, by Dr. W. E. Ford, of Utica; Observations on Abdominal and Pelvic Surgery. Preparation, Operation, and Results, by Dr. W. Gill Wylie, of New York; The Merits of Abdominal Hysterectomy (with Modified Technics) for Large Tumors, as Contrasted with the Operation of Morcellement, by Dr. Charles A. L. Reed, of Cincinnati; Absorbable Ligatures and Sutures in Pelvic Surgery, by Dr. Walter B. Chase, of Brooklyn; Puerperal Eclampsia, by Dr.

William Warren Potter, of Buffalo; Indications for, and Technics of, the Induction of Premature Labor, by Dr. James P. Boyd, of Albany; Infection of the Puerpera, by Dr. A. B. Miller, of Syracuse; Obstetric Delivery by Abdominal Section—Indications and Methods, by Dr. Willis G. Macdonald, of Albany; The Relations of Posterior Displacements to Pregnancy, by Dr. Matthew D. Mann, of Buffalo; The Present Treatment of Fibroids Associated with Pregnancy, by Dr. A. Vander Veer, of Albany (to be discussed by Dr. W. M. Polk, Dr. H. J. Boldt, Dr. C. A. von Ramdohr, and Dr. George M. Edebohls, of New York); A Contribution to the Study of Amœbic Dysentery, by Dr. Charles E. Lockwood, of New York; Practical Points Relating to the Diagnosis and Management of Syphilitic Brain Diseases, by Dr. E. C. Spitzka, of New York; The Treatment of Locomotor Ataxia, by Dr. Landon Carter Gray, of New York; A Case of Erythromelalgia, by Dr. Henry L. Elsner, of Syracuse; Strophanthus; a Clinical Study, by Dr. R. W. Wilcox, of New York; Should not the Credé Method be made Obligatory? by Dr. Lucien Howe, of Buffalo; The Common Causes of the Contamination of Drinking Water, by Dr. T. M. Cheesman, of New York; Diseases which can be Directly Traced to Contaminated Drinking Water, by Dr. George Blumer, of Albany; A Statistical Inquiry into the Relation of Contaminated Drinking Water and Typhoid Fever, by Dr. J. S. Billings, Jr., of New York; The Dangers of Domestic Use, other than Drinking, of Contaminated Water, by Dr. G. R. Freeman, of New York; Methods of Purification of Impure Water, by Dr. T. B. Carpenter, of Buffalo; Methods of Prevention of Pollution of Water, by Dr. E. K. Dunham, of New York; The Life History of the Typhoid Bacillus outside the Body, by Dr. F. C. Curtis, of Albany; The Bacteriological Diagnosis of Typhoid Fever, by Dr. J. S. Ely, of New York; Typhoid Fever in Children, by Dr. W. P. Northrup, of New York; The Medicinal and Dietetic Treatment of Typhoid Fever, by Dr. W. S. Ely, of New York; The External and Internal Use of Water in Typhoid Fever, by Dr. C. G. Stockton, of Buffalo; The Importance and Practical Method of Disinfection of Excreta of Typhoid Patients, by Dr. W. G. Thompson, of New York; The Double Murphy Button and Anastomosis, by Dr. J. H. Glass, of Utica; Some Cases of Disease of the Testicle, by Dr. L. B. Bangs, of New York; Hereditary Syphilis, by Dr. A. Jacobi, of New York; Acute Inflammation of the Gall Bladder, by Dr. Maurice H. Richardson, of Boston; Personal Experience in Hernia of the Bladder, by Dr. C. L. Gibson, of New York; The Management of Clubfoot, by Dr. A. M. Phelps, of New York; Stricture of the Rectum, its Ætiology and Treatment, by Dr. Joseph M. Mathews, of Louisville; The Surgical Treatment of Cancer of the Rectum, by Dr. Daniel Lewis, of New York; When is Colotomy Justifiable? by Dr. Charles B. Kelsey, of New York; The Proper Method of Treating Internal Hæmorrhoids, by Dr. Robert T. Morris, of New York; The Preventive, Operative, and After Treatment of Fistula in ano, by Dr. Edward Clark, of Buffalo; Prolapsus of the Rectum, by Dr. George R. Fowler, of Brooklyn; The Importance of Choked Disc (Optic Neuritis) as a Symptom of Brain Tumor, by Dr. William C. Krauss, of Buffalo; Notes of Cases in Suggestive Therapeutics (Hypnotism), by Dr. H. S. Drayton, of New York; The Comparative Value of Optometric Methods, by Dr. C. M. Culver, of Albany; The Deficient Excretion from Kidneys not originally Diseased, Some Diseases Peculiar to Women, and Diseases of the Skin, by Dr. L. D. Bulkley, of New York; The Necessity of New Methods of Early Diagnosis in Tuberculous Disease to Curative Treatment, by Dr. J. B. Ransom, of Dannemora; A Rare Complication of Acute Rheumatism, by Dr. Eugene Beach, of Gloversville; and A Case of Hernia of a Sarcomatous Ovary, by Dr. George Seymour, of Utica. The following exhibitions will be given: The practical application of X rays in a case of fracture, by Dr. William Hailes, of Albany; X-ray stereopticon exhibition, by Dr. William J. Morton, of New York; and photography of the living urinary bladder, with photographs and instruments, and some improvements in urethroscopic apparatus, by Dr. W. K. Otis, of New York.

The Doctors' Club of the City of New York.—A society has been organized for the purpose of presenting scientific communications and patients and exhibiting specimens, new instruments, and apparatus, which is to be known as the Doctors' Club of the City of New York. The following officers have been elected: President, Dr. Samuel H. McIlroy; first vice-president, Dr. John F. Holmes; second vice-president, Dr. Franklin D. Skeel; secretary, Dr. Emil Heuel; and treasurer, Dr. William J. O'Byrne. The meetings are to be held on the second Wednesday of each month at No. 368 Alexander Avenue.

The Buffalo Academy of Medicine.—At the next meeting of the Section in Obstetrics and Gynæcology, on Tuesday evening, the 26th inst., the following papers will be read: The Ætiology, Pathology, and Diagnosis of Extra-uterine Pregnancy, by Dr. Marcell Hartwig; and The Treatment of Extra-uterine Pregnancy, by Dr. H. E. Hayd.

The New York Celtic Medical Society.—At the next regular meeting, on Thursday evening, the 28th inst., the order for the evening will be as follows: Scientific communications; exhibition of instruments and specimens; and presentation of cases.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening the 21st inst., the following papers were to be read: A Further Study of Tuberculous Infection of Dust, by Dr. Irwin H. Hance; The Preparation of Blood for Microscopical Examination, by Dr. Henry G. Piffard; and The Hygienic, Educational, and Symptomatic Treatment of Pulmonary Tuberculosis, with a Plea for Sanatoriums for the Poor, by Dr. S. A. Knopf, which was to be discussed by Dr. E. L. Trudeau, Dr. Prudden, Dr. Janeway, Dr. A. A. Smith, Dr. H. M. Biggs, Dr. Brannan, Dr. Andrew H. Smith, and Dr. W. H. Thomson.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 27th inst., a paper entitled Why are Operations on the Turbinate Bodies becoming less Frequent? will be read by Dr. C. C. Rice. Dr. J. E. Giles will give a demonstration of a controller for the Edison current for the cautery, and Dr. J. W. Gleitsmann will give one of a controller for the street current for light, cautery, and motor. Dr. A. G. Gerster will exhibit some specimens of a sarcomatous larynx and of epithelioma of the tonsil.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 28th inst., Dr. J. Clarence Webster, of Edinburgh, will read a paper on The Biological Basis of Menstruation. There will be a presentation of patients and an exhibition of instruments.

Lectures and Addresses.

THE OPPORTUNITIES AND RESPONSIBILITIES OF MODERN MEDICINE.*

BY ALGERNON T. BRISTOW, M. D.,
BROOKLYN.

HISTORY teaches the observant mind that great intellectual progress proceeds along different lines at different epochs. There seems to be an exact measure of psychic force inherent to the race. Along the channels in which this runs is the development of human intelligence the greatest and its achievements most illustrious. In the days of ancient Greece this development was largely in the line of literary activity. This was the age of great epics, great dramas, and profound and subtle philosophy. The inventive faculties then seemed dormant; nevertheless, in the mathematics of Euclid Greece laid the foundations of modern science. Later on in the world's history, the contribution of Rome to human progress, apart from the influence of her arms in overthrowing artificial barriers and welding scattered tribes into nations, was the establishment of the Roman law, the foundation and source of modern jurisprudence. Without an orderly administration of justice it is impossible for the inventive genius of man to be developed, for as this contributes to the material welfare of the race and looks to the building up of great industries requiring great financial support, without the security which a firm system of law alone can insure these can not exist. There was, therefore, in the turbulence and license of the Middle Ages no incentive for the mind to develop along the lines of its advancement in the present century. Where there was no security for property there was little incentive to the establishment of manufacturing industries, or for the substitution of machine labor for that of human hands. Yet the achievements of the nineteenth century would have been impossible without the aid afforded by the growth of invention and construction. Literature has added but few great names to her list of *illuminati* since the year 1800, but above all he centuries that have gone before, of which history possesses a record, the century now drawing to a close has been peculiarly distinguished for great activity and development of inventive genius. Thus there has been endered possible a concentration of power unknown beore the advent of the Atlantic liner, the locomotive, he telegraph, all the countless inventions that have ound birth in the past few decades. We of toay are reaping the benefits of the struggles of bygone heroes, and the achievements of the present have been endered possible by the development through the past of that correlation of forces and conditions which we call civilization. In times gone by, great discoveries have numbered but one or two in a hundred years, each made by men whose names have stood out in the record of their times, isolated by their own genius and the unique quality of their work. The past has been the day of the individual. To-day we lose sight of the unit, but gain in power because of the wonderful multiplication of workers. Thus there follows a concentration of intelligence, a comparison of results, and an unequaled rapidity of achievement. The day of paramount individual pre-eminence is, to a certain extent, a thing of the past. Of our greatest workers or investigators it may be more justly said of each that rather he is *primus inter pares*, than that he outstrips his competitors "by a long interval." The facilities of communication afforded by rapid transportation and the telegraph have so brought scientific men all over the world into touch that they no longer work as individuals, each in his own isolated sphere, but rather together toward a common goal, coworkers rather than rivals. Informed of the results of scientific research or labor throughout the world, the work of the individual is shortened and simplified, and it becomes possible in a few years to arrive at conclusions not otherwise attainable by centuries of study and experiment. Co-operation has its place in science, as in trade and commerce, and has been the means in the past few years of rapidly sifting the wheat from the chaff, eliminating not only error in the gross, but largely correcting those faults in individual work which arise from what astronomers call the "personal equation." There is no better example of the extreme rapidity with which the work of others may now be tried in the crucible of experience than the fate of Koch's lymph. Although heralded by a great name, aided by the influence of a powerful government, in a few months it had been weighed in the clinical balance and estimated at its true value. What then is it in the latter half of this nineteenth century of ours that has given us a supreme advantage, even the weakest of us, over the Hunters, the Boerhaaves, the Harveys of bygone centuries? We possess not only a broader education but a more continued. When we have graduated, we have but commenced our course of instruction. Formerly, when isolation was the rule, self-education was an impossibility, except by the slow and tedious process of experience in the individual, which it was necessary should extend over a lifetime before it reached its greatest value. Much of this experience died with the scholar and was lost.

To-day the printing press and the telegraph have come to the aid of science and rescue from oblivion scattered treasures of observation and experience from the four quarters of the globe. The medical literature of the world, as set forth in the journals, is therefore one of the most potent factors in making the progress of our art signal and rapid at the present time. The medical journal of to-day, with its digests, its clinical reports, and its original articles, is a school of instruction, a compendium of the experience of the world. It compresses into a year of reading experience which a century ago it was not possible for a single individual to acquire in a lifetime of practice. Co-operation may in the future accomplish wonders in the commercial world; it has already wrought miracles in medicine and surgery. As an example of the rapidity with which an operation to-day may be tested, approved, and adopted, I need only mention that of symphysiotomy. This operation was first performed in 1585, at Warsaw, by de la Courvee; next, by Plenck, in Germany, in 1766. So far as we know, then, there was a lapse of almost two centuries before the work of the first observer was repeated by a second. It is more than probable that the second operation was, so far as its conception, original and not the result of the first. Both these operations were on the bodies of women who had died in labor and for the purpose of saving the child. They were both, no doubt, *tentative* procedures. In 1768, Sigault, of Paris, proposed the same method as a means of facilitating delivery where the mother was living, and the first operation of this sort was done in Naples by Ferrara, who had studied in Paris. The case ended fatally. Note the influence of the first observer on the second. It was because Ferrara had received the idea from the French observer that he put it in practice in his own town. How limited was the circle of workers then that knew or could know of the new procedure! Among many men, it is to be remembered that but one or two may see the true bearing and advantages of a new procedure in medicine or surgery. Thus, in the past it was entirely a matter of accident whether the new discovery was brought to the right men, capable of estimating its future usefulness. Now, thanks to the power and distributing agency of the medical press, it can not fail to fall on fruitful soil, for be assured that it is the reading man and not the mere money-getter who is likely to be the investigator, the advanced worker. In 1777, nine years after he had proposed it, Sigault himself performed the operation on a French woman successfully, but, although the surgeon was crowned with laurel, the operation was not itself received as a recognized surgical procedure, and in the century that followed fell into almost complete disuse until the year 1866. This was the date of Morosani's first successful case. The subsequent establishment of the operation is entirely dependent on those most fruitful sources of professional strength and advancement, medical societies and medical literature. The scope of the operation was determined in a twelvemonth, by different workers in widely separated parts of the world. The various sources of error and danger have thus been detected and eliminated, until now the operation rests on a firm basis. The history of antisepsis is another case in which surgery was in ten years revolutionized. Compare the slow and uncertain progress of the ligature, when first introduced by Paré, with the rapid progress of antiseptic surgery. It is true that the human mind, particularly the scientific mind, is now in a more receptive mood than centuries ago, but is not this very receptivity a result of the experience which is due to the constant interchange of thought, both in the societies and the journals? Nothing promotes narrowness of mind and a contracted mental vision so much as isolation. On the other hand, the polishing process can only take place by mutual attrition. The greatest opportunity which our modern science and civilization offer to the medical worker of to-day is the abundance of literature which the printing press places at his disposal. There are the journals on special subjects and those which embrace the general field of the healing art. I need not specify the names of such periodicals to this audience. Indiscriminate and omnivorous reading is better than idleness, but the reader who does not classify his literature does not, it seems to me, utilize his material to the best advantage. A heterogeneous mass of information gathered from all sources is likely, in an emergency, to leave its owner in the position of one who always thinks of a bright retort after the opportunity to use it has gone by. But a lost opportunity in our art often means the sacrifice of a life. Knowledge, especially that which we gain from current literature, needs to be classified in order to be of full value. Accurate information in any branch is always classified information. I have found the following plan to be of great use in my own case in keeping my facts where they are readily attainable: As soon as possible after the receipt of a journal, as I read over the different articles, I check them off and enter each subject in a card-catalogue index. I devote my indexes exclusively to the subject in which I am engaged, surgery. Thus, on the subject of hernia, all the articles on hernia appearing in the various journals are entered by title, author's name, journal, page, and volume. I find, on referring to my index, that I have fourteen such references on hernia. On the surgery of the gall bladder, thirteen references. On the surgery of the intestines, twelve references. On the surgery of the ureters, nine. Yet it is but two years since I commenced this system. Who can doubt but that in the thirteen references to the surgery of the gall bladder there is contained a mass of information concerning both diagnosis and technique which is unsurpassed, not a tenth part of which could be found in any three modern surgical text-books? Yet it is all at my disposal in the time that it takes to look over the card and get down the journals. The surgery of the ureters has been developed in the past few years, and except in the most recent text-books there is absolutely nothing to be found on this point. In the nine references on my card the subject is exhaustively treated, and I have almost a volume at my disposal, an amount of material at least for which no writer on surgery, no editor of an encyclopædia could find room in a single work. There is also in the labor of indexing the literature a sort of fixative which impresses the subject on the memory. The best system of mnemonics is that which involves an orderly classification of facts, and this cataloguing of current literature is that and nothing more. The method has been of great benefit to the writer, and I hope that I may be permitted to mention it, not as anything original or new, but as worth adopting, and to be commended as a means of rendering most useful one of the greatest opportunities of modern medicine, its rich literature. There is an element of modern society, however, that literature can never supply, and that is the personal influence of the individual. Reading widens our knowledge, but only by personal contact with each other can we catch the divine afflatus, the stimulus to personal effort, to reach after higher things. The cold pages of scientific literature can never put heart into a man nor create enthusiasm. That must be born in us or communicated by those with an excess to those of us less fortunate, but of receptive minds. I place second to no other that influence which I have experienced from personal contact with the eminent workers of our city. I have gained courage and fortitude in trying situations from the example of my brethren. We need the mutual help that comes from association, the spur that comes from an honorable and generous emulation to assist us to climb to higher levels. The societies of to-day supply this place in our medical polity. We can gain knowledge from reading; enthusiasm comes from personal contact. Without enthusiasm there can be no true science, and the noble art of medicine degenerates into a business, the physician becomes a mere money-getter. Great institutions like the Academy of Medicine are, it is true, born of great minds and noble fortunes nobly used. At the same time, such institutions become the nurseries of greatness and minister to aspiring souls. Example and contact are the two forces that stimulate the growth of the scientific mind. But few of us are born great, but by association individual units, themselves perhaps insignificant, together make for greatness, each increasing its own value by association and contact with others. It seems, therefore, that in neglecting the societies of the present day, if we do so, we cast aside one of the opportunities that modern medicine offers us, not only for our personal advancement but for the advancement of medicine itself. With the opportunities offered us by the journalism and the medical societies of to-day we have, then, the responsibility thrown upon us of rightly using them and of sustaining them both by our writings and presence. It is not enough that we read the journals and properly arrange the material in our minds so that it can be available readily. We should also be willing to contribute our experience for the benefit of our brethren. Medicine is a science which must ever depend on recorded facts for diagnosis and the estimation of values in therapeutics, and it is of importance that observers with trained minds should be willing to take the time to make proper scientific observations and publish them. Medicine is fast getting rid of the reproach that it is not an exact science, and the sooner every practitioner becomes also a recorder as well as an observer, the farther removed will be this reproach from us. The man who takes the time and trouble to record his work will not only benefit others, but will, in greater measure, benefit himself. It has been often said that one never becomes master of a subject until he teaches it. We all acknowledge the truth of this fact. Yet it is not necessary to have a position in a school of medicine to gain all the benefits that are inherent in a teaching position. Some of the world's greatest teachers have taught from their own firesides, and the press of to-day can give the thoughtful and observant physician a far wider audience than is commanded by any teacher in a local school. There is besides the added stimulus to study that always must accompany the effort to teach others. When we sit down to write we know that our facts will be criticised, sifted; our deductions scrutinized. We are thus stimulated to closer observation and more careful research. The value of teaching largely consists in the fact that the teacher must possess exact knowledge and must keep up with the times. Similar requirements compel the writer for the medical press to the same exertions. Thus, while we contribute to the knowledge of others, at the same time we are ourselves gaining in power. It has been the observation of the writer with regard to some of the best workers in this city that they have neglected their duty to their brethren too long in this respect, in that they have not contributed of their wide experience to the enlightenment of others. There are men within the sound of my voice who have in their own particular branch of medicine an experience that reaches over thousands of cases, and yet it is the regret of the writer, and must be of all of us, that they seldom put pen to paper. Such men are not filling the measure of their responsibility. Necessary as is the acquisition of a competence for ourselves and our families, our duty does not end there. We have a more public responsibility, and as we have a ready medium of communicating our experience to our fellows there is thus laid upon us the burden of fulfilling our plain duty to the profession, and of enlightening our neighbors from our own storehouse of knowledge and experience.

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* An address delivered before the Long Island Alumni Association Columbia University, Medical Department, October 5, 1896.

While we may gain knowledge from the writings of others, we can not thus ever catch the benefit of their example. There is something in personal contact with each other that literature can never supply. Enthusiasm, the example that is set by our hard workers is something that can not be caught from the printed page. Why is it that some men are better teachers than others? It is not always because the facts which are presented are more lucidly set forth by one man than by another. It is rather because one man has an enthusiasm in his work which he is able to communicate to others. This is a gift. There is such a thing as the power of some minds to create by induction in the minds of others a spirit akin to that which animates their own. It is like the electric current which is excited by the passage of the primary wave through a neighboring wire. There is a stimulus in companionship that can not be overrated, and the societies of to-day supply us with the means of acquiring this stimulus. Ours is the responsibility, if by our absence we fail to take advantage of such an opportunity. Ours the responsibility if, attending, we fail to participate in the discussions of our fellow-workers. It seems to me a pity in this connection that the plan for a society building in Brooklyn at present languishes. No one thing done in this city at present would more advance the cause of scientific medicine than the erection of a proper home for the county society, in which all the special societies could find shelter. What inducement is there at present for us to immure ourselves for an hour or two in a stuffy, ill-ventilated den more fit for the assembling of a boys' debating club than the meeting place of a learned society with over five hundred members? I can not but regret in this connection that the unfortunate differences of years ago keep from us not only the presence but the support and contributions of a large number of gentlemen who ought to be in our ranks. Modern medicine ought to be broad enough to admit of different views on many subjects without there being a sufficient cause for a separation of the medical profession into two camps. Such a separation must inevitably weaken, has weakened, the influence of the profession.

Our business is to cure disease, and we ought not to waste our time and energies and divide our forces on subjects which can now certainly be left to the individual conscience. What the state recognizes as legal we must recognize, if we would be good citizens. At the present juncture of affairs in this city it seems a great pity that this division in our ranks should persist when, for the advancement of the science to which we are all devoted, we need united effort. In a great city like Brooklyn no society can really flourish without a permanent home worthy of the profession. Libraries must be properly housed and in a position where the books can be consulted readily and pleasantly. At present we are at an absolute standstill in this matter. For the advancement of science, for the unification of the profession, is it not possible for us to arrive at a *modus vivendi* in which we can all live at peace and join our forces, and so carry to completion that building in which we are all interested? I hope that this will not be considered an inopportune digression. I regard the assembling of ourselves together in the various societies and in the parent society as one of the opportunities of modern medicine, and it is a responsibility laid upon us in this city to provide a suitable place of assemblage. This is a day of reconciliation. Not so very long ago, the two bodies in the Presbyterian Church, after a separation of over half a century, found it possible to heal their differences and unite. Who will say that the Presbyterian Church has not thereby been greatly strengthened? Is it impossible for the divided forces in our own profession to find a way to unite? Doctors ought not to be more obstinate than parsons. As the active work of the year begins now, after the summer vacation, as the societies draw together again, I can not refrain from advancing this plea for unity in order that the cause of medicine in this city may be advanced, the division in our ranks closed, and the profession, again united, be enabled to erect a worthy home for a united society. Our personal influence may stand for a great deal in furthering so worthy an enterprise, and I trust that this suggestion may be taken in good part and be the means of helping on a consummation most devoutly to be wished for, the unity of the profession of medicine in Brooklyn.

In a general way, I have thus far indicated what in my judgment constitute our opportunities in a broad sense, and have outlined the responsibilities which the opportunities of journalism and the medical societies have laid upon us. The distinguishing character of the work of the past few years has been in the line of rendering medicine more nearly an exact science. Our means of diagnosis, our therapeusis, our methods of operating have all been improved. By rational and humane experiments on animals new operations and new remedies have been proved and placed on a firm foundation. It may be of advantage to recall a few of the newer methods to your notice.

The youthful science of bacteriology has rendered the greatest assistance to diagnostic medicine, and goes hand in hand with the companion science of pathology, of which it is indeed but a part, rather than a distinct science. With the aid of the bacteriologists we are able to make a far earlier diagnosis of the infection of the human organism by the tubercle bacillus than has before been possible. I remember a striking instance of this in my own experience. Some years ago, when working in the bacteriological department of the Hoagland Laboratory, a specimen of sputum was brought to me for examination. This was in September. I examined for tubercle and found the bacilli in great numbers. The gentleman who brought me the specimen, on my making the report, said to me: "Doctor, do you know that in the late spring, Dr. X., of New York (mentioning a name that was then a household word) examined this lady's chest and pronounced her case one of chronic bronchitis?" There was not at the time a better physical diagnostician in the country than the gentleman who made this diagnosis, and yet I am convinced that an examination of the sputum made at that time would have revealed the true nature of the disease. If there is a stage when consumption is curable it is in its very inception. It is worse than inhuman to send patients away from home with cavities and expect them to recover. Make a diagnosis before there has been destruction of lung tissue, when there is a simple bronchial catarrh with an involvement of a few of the vesicles in the apex, and these are the cases that we may expect to save by change of climate. The great majority of phthisis cases I believe to be curable in the early stage, but this is before it is possible to make a diagnosis except by the microscope. It would be of the greatest advantage to the profession if the microscope were more generally used than it is. At present its chief use among practitioners is in the search for casts, nor is this altogether to be wondered at. At present few of the schools of medicine require a course in bacteriology, and, as few men learn more than is required of them, the graduates make no more use of the microscope than was expected of them when undergraduates in their medical school. How many errors of diagnosis might be avoided if the microscope were used as it ought to be! Take one instance—the presence in the blood of the *Plasmodium malariæ* as a symptom of the paludal fevers. I quote from a paper by Dr. Hurd, of the Johns Hopkins Hospital, which appeared in the August number of the *Bulletin of the American Academy of Medicine:* "If malarial influence does not depend upon the demonstrated presence of the plasmodium in the blood, it is more than probable that the condition has not a malarial origin, and some other cause should be sought for." Who of us here has not treated the onset of typhoid fever as an intermittent? How many times has deep-seated suppuration, with its chills and evening rise of temperature, been met with the exhibition of large doses of quinine! An appeal to the microscope before the administration of quinine might have prevented such errors, or at least made us more alert. The commonest diagnostic errors that are made to-day are those which confound the rises of temperature which accompany obscure tuberculous lesions and suppurations with the elevation of temperature due to an intermittent. I have made this mistake myself and have seen it repeated by far abler diagnosticians. We are not taking advantage of modern methods when we do not make it a routine procedure to examine the blood for the plasmodium prior to the administration of quinine for a paludal fever. Especially ought this to be done in a doubtful case. Failing its discovery, we ought to make further search for the cause of the febrile movement. This and this only is exact medicine. Every diagnosis which is capable of confirmation by the microscope ought not to fail of this test. One of the old evasions of medicine has fallen before the microscope and the culture tube, and that is the idea that there are any diseases which are idiopathic. We used, in the lecture of twenty years ago, to hear a good deal of idiopathic peritonitis. We now know the relation of the intestinal and other pathogenic organisms to this disease and are aware of the fact that it is never idiopathic. There can no more be an idiopathic disease than there can be idiopathic weeds. As spring weeds from seeds sown by the wind in garden soil, so from various intruding organisms come most of the diseases to which the body is heir, except the scleroses, and these are degenerative changes. Every year removes some disease from the *terra incognita* of speculation to the certainty which rests on proof. Take, for instance, pneumonia and epidemic cerebrospinal meningitis. We know that both diseases are the result of the growth of the *Bacillus lanceolatus,* in one case in the lungs, in the other in the meninges of the brain and spinal cord. So in many ways is medicine becoming an exact science, and this is due in large measure to the work of the laboratories, aided by the clinical observation and records of acute minds and the employment of exact means of diagnosis such as have been indicated. Modern methods have done much to clear up the conditions of the blood in certain diseases. We have such instruments of precision at our disposal as Gowers's or the Abbé-Zeiss disc counter and the hæmoglobinometer of Fleischl, and for the same purpose, in an improved and much more convenient form, the apparatus of Daland, which renders the use of the microscope unnecessary. Then, with regard to the different blood elements, we have the Ehrlich stains, which enable us to distinguish between the eosinophile, or those cellular elements of the blood which show a special affinity for eosin, and the other cells. All these new methods and instruments of precision are in the line of making our work more exact. Take another set of disorders—those of digestion. A few years ago most practitioners thought they had done their full duty by a case of dyspepsia when they regulated the bowels and gave pepsin and hydrochloric acid. Whether there was an excess or a deficiency of acid in the stomach they never inquired, or to what extent the fault lay in the intestinal tract and the pancreatic secretion. We have all seen prescriptions in which with praiseworthy zeal the practitioner, mindful of the intestinal tract, fired a shotgun prescription into his patient in which pepsin, pancreatin, and an acid were combined. Now the intelligent observer, the reading man, the man who takes the journals and buys new books, administers a trial breakfast in a complicated case of indigestion, either that of Ewald or Leube, and tests for HCl. He is thus enabled to make a more precise diagnosis, and with exact work does not prescribe at random nor give incompatibles. In every branch of medicine there is this tendency to precision. Take the work that is being done in obstetrics nowadays. Twenty years, yes, ten years ago, the obstetrician was for the most part satisfied to let his patient fall in labor unless she was manifestly deformed, and trust to finding out that she had a narrow pelvis when the head got jammed and the necessity of interference was made manifest by the agony and fruitless labor of the patient. As a distinguished practitioner of the art said to a patient of my own not long ago, "Madam, we do not now wait until the patient gets into trouble. We anticipate that trouble and prevent it." To illustrate the truth of this remark, I mention a case from my own practice: A delicate woman came to me a year or two ago to ask whether she could safely become pregnant, as her sister had barely escaped with her life from childbirth, and she feared, therefore, for her own safety, being of slight frame. Mindful of my responsibilities, and determined to leave no means untried by which to arrive at the truth, I used the pelvimeter, and, although from a casual inspection I should have judged differently, the external measurements showed a dangerously narrow pelvis. As she was anxious to have a child, I sent her to my friend Dr. Jewett, and the verdict came back: "At term, the Cæsarean section. Possible, perhaps, to have a living child at seven months by the induction of artificial labor." Is it not probable that twenty years ago this lady would have been permitted to fall in labor at term? The general symmetry of her form was not at fault, and she was only saved from great peril by the application of modern methods too seldom resorted to by many. Yet the pelvimeter is a simple instrument to use, and if oftener appealed to would give warnings which would save poor womankind much misery and the profession some reproach.

It has been said with justice in the past that medicine is an inexact science. If we would remove this reproach, it can only be by making use of the exact methods which modern medicine offers us.

There are no such things as inexact processes in Nature, whether in the laws that govern the universe and keep the stars in their places or those which regulate the development of a bacillus. It is we who are inexact; and when we speak of medicine as an inexact science, it is because we are inaccurate observers, ignorant observers, erroneous in our deductions.

If we survey the work of the last decade, we shall see that the development of our art has been in the direction of exact work. Speculation has given place to rational experiment; the alchemist's den, with its retorts, to the modern laboratory with its culture tube and microscopes; the search for the philosopher's stone, to researches into the origin of disease. The alchemist of the Middle Ages sought in vain for the elixir of life, but from the doors of our laboratories of this nineteenth century comes length of days to mankind. The pestilence walks in darkness no longer. The search light of science casts its rays into the depths of the night and its terror vanishes. The devastation of great epidemics, we hope, is a thing of the past, for preventive medicine now stands in the path of the destroyer, the plague is stayed and nations rejoice. Such results have been attained by patient labor, exact work, exact observation, exact records.

Who can prophesy the future of serum therapy? That terror of childhood, well named diphtheria the destroyer, has been robbed of half its quiver of arrows by the *Heilserum* of Behring, Roux, and others. Already we are beginning to hear of cases of tetanus which yield to the appropriate antitoxine, nor will it be long before we shall be in possession of an antitoxine against suppurative and septic organisms. Time forbids that I should more than touch on so fascinating a subject as serum therapy. It promises much, and the twentieth century will doubtless see all the zymotic diseases in the same classification with small-pox, as preventible by similar methods. Skiagraphy has a future for the diagnostician both in medicine and surgery. When we recollect the crudities of Daguerre, we may expect the future to simplify the application of the X ray, and, indeed, recent observations and experiments justify this hope. Men of Brooklyn, the world is astir around us. The march of events in our profession is rapid. In our ears resounds the tramp of our neighbors' footsteps. Shall we stand still? We can not. In these days that means self-destruction, mediocrity. We must move onward. We must keep pace with the best workers in other cities. What is being done elsewhere can be done in Brooklyn, by any of us, but we must be familiar with the methods of the hour and put them to use.

Nor ought we to plead ignorance of laboratory methods. I know many men, busy men, too, who have in middle life, conscious of these new factors in medicine, taken laboratory courses to familiarize themselves with the new truths. I hope to see the time, not far distant, when summer courses may be given in bacteriology and pathology and the technics of modern microscopy with the new methods and stains. In the summer time most of us have some leisure, and a summer school in laboratory practice would be of value in this city. We can not stay long behind, gentlemen, without soon lagging hopelessly in the rear. Fortunes built up on personal magnetism are becoming rarer and rarer. The people, our clients, are becoming better educated, and soon distinguish between the success which is dependent on purely personal qualities and that which is rooted in knowledge. The day of the good fellow in medicine, what with State examinations and the general raising of the standard of medical education, is, to a great extent, of the past. Mere personal magnetism can no longer gain a man success, and, as the struggle grows keener, those men in the long run will reap success who are the best qualified. In a paper of this character, necessarily short, I have been able only to indicate a very few of the advances in modern medicine which constitute the opportunity of the present. Ours is the responsibility as well as the privilege of familiarizing ourselves with the methods of to-day. The true physician is a public servant, and that man who never looks beyond his own immediate necessities, who regards the profession of medicine as but a means of support, whose daily round is but a treadmill to coin dollars, will never attain the full measure of usefulness of which he is capable. There is hardly a walk in life for educated men which does not offer greater advantages for the accumulation of property than the profession of medicine. For its votaries, the science and art of healing has other and higher rewards: the ability to relieve distress and suffering, to arrest disease, to restore the dying to the arms of affection, the consciousness of doing well for others, a life well spent.

Aside from the intellectual pleasure which every educated man enjoys when he is conscious of doing a high grade of intellectual work, there is or ought to be the consciousness of service to the race. After all, there is nothing in life of value to be compared to the feeling that we are doing useful work, that we are helping our fellows, and doing our part in lifting the load of misery which oppresses the human race. If our aims in life are purely personal, shadows we are, but shadows we pursue. As the Scotch lassie, Jeannie Deans, says in her appeal to the queen: "Alas! it is not when we sleep soft and wake merrily ourselves, that we think on other people's sufferings. Our hearts are waxed light within us then, and we are for righting our ain wrangs and fighting our ain battles. But when the hour of trouble comes, to the mind or to the body, and seldom may it visit your Leddyship! and when the hour of death comes, that comes to high and low, lang and late may it be yours, oh my Leddy! then it isna what we hae dune for oursels, but what we hae dune for others, that we think on maist pleasantly."

Original Communications.

STAPHYLOCOCCUS-AUREUS INFECTION WITH ENDOCARDITIS

SIMULATING MALARIAL INTERMITTENT FEVER (DOUBLE QUOTIDIAN).

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SOME time ago * I reported some cases of malignant endocarditis simulating malarial intermittent fever. I wish now to report another case interesting as a pathological curiosity, and also important as an example of a common diagnostic difficulty.

Before death, the previous history of the patient was obscure. The most plausible of the somewhat contradictory statements was to the effect that after one or more injuries to the head from falls the man became aphasic. The patient was sent to my colleague Dr. W. J. Herdman, professor of nervous diseases in the University of Michigan, for treatment, with a view to operating. Dr. Herdman, however, found that the patient had intermittent fever and had been treated for malaria; he therefore had the patient referred to my ward.

Condition on Admission.—C. D., farmer, aged thirty-four years. Frame of medium size; emaciated; skin pale, dry, and sallow. Patient tosses in bed, does not speak, though he uttered one or two sentences soon after admission. Protrudes tongue when chin is pressed; moves slightly when pricked in various parts. Pupil reflexes and motion of bulbs normal. There is an hypertrophic scar, an inch long and half an inch wide, over the lambda, without thickening or depression of the bone.

Examination of lungs negative. The heart dullness is slightly enlarged; apex beat not visible nor palpable; the sounds faint, but apparently clear. Owing to the great rapidity of the heart's action auscultation is unsatisfactory.

Liver dullness extends to just below the margin of the ribs.

Splenic dullness enlarged; the spleen can be felt as a soft mass about an inch beyond the margin of the ribs. Examination of the rest of the abdomen negative.

The urine has been passed in bed. There is diarrhœa, with frequent watery stools.

The blood flows freely; it is pale and watery. The red corpuscles number 2,670,000 to the cubic millimetre; they are pale, otherwise not remarkable. Leucocytes, 45,000. Hæmoglobin (Fleischl), 50. There are no malarial parasites in fresh or stained preparations; no pigmented leucocytes; no bacteria (in preparations stained with Loeffler's methylene blue; cultures not made). Differential count of the leucocytes shows: Multinuclear, ninety-four per cent.; large uninuclear and transition forms, five per cent.; large lymphocytes, one per cent.; no eosinophiles (several covers examined).

A diagnosis of pyæmia was made, the primary focus assigned to the cranium on account of the history. In the absence of localizing signs an operation was not attempted.

The temperature for ten days before admission was reported as forming a double curve daily, with one paroxysm at night and one at noon. This was confirmed by careful observations, and the accompanying chart shows the remarkable features of the curve—viz.: the rhythmical sequence of the paroxysms, the abrupt rise, and complete defervescence. Both sets of paroxysms postponed irregularly. There was a severe and prolonged chill during the rise of temperature. Sweating did not occur at all.

The pulse was usually between 100 and 120 in the apyrexia, rising to 180 or more in the paroxysms. At the height of the paroxysm the pulse could not be counted.

The patient was fed with difficulty, sometimes refusing to swallow.

A small amount of urine was obtained. It contained a trace of albumin and a few pale granular casts.

Early in the morning of the fourth day after admission the right arm and leg became paralyzed. The heart became weaker. A few small hæmorrhagic spots appeared in the skin of the abdomen. The skin became yellowish, but the scleræ were not icteric. Cyanosis and frequent respiration appeared in the afternoon, and death occurred shortly after midnight.

An autopsy was made ten hours after death by Dr. A. S. Warthin, demonstrator of pathological anatomy, from whose report I extract the following notes:

Post-mortem Diagnosis.—Septic endocarditis (mitral valve); dilatation and hypertrophy of the heart; septic and anæmic infarcts of the spleen and kidneys; white thrombus of left internal carotid artery; anæmic softening of brain; parenchymatous degeneration of organs; goître. Multiple foci containing *Staphylococcus pyogenes aureus.*

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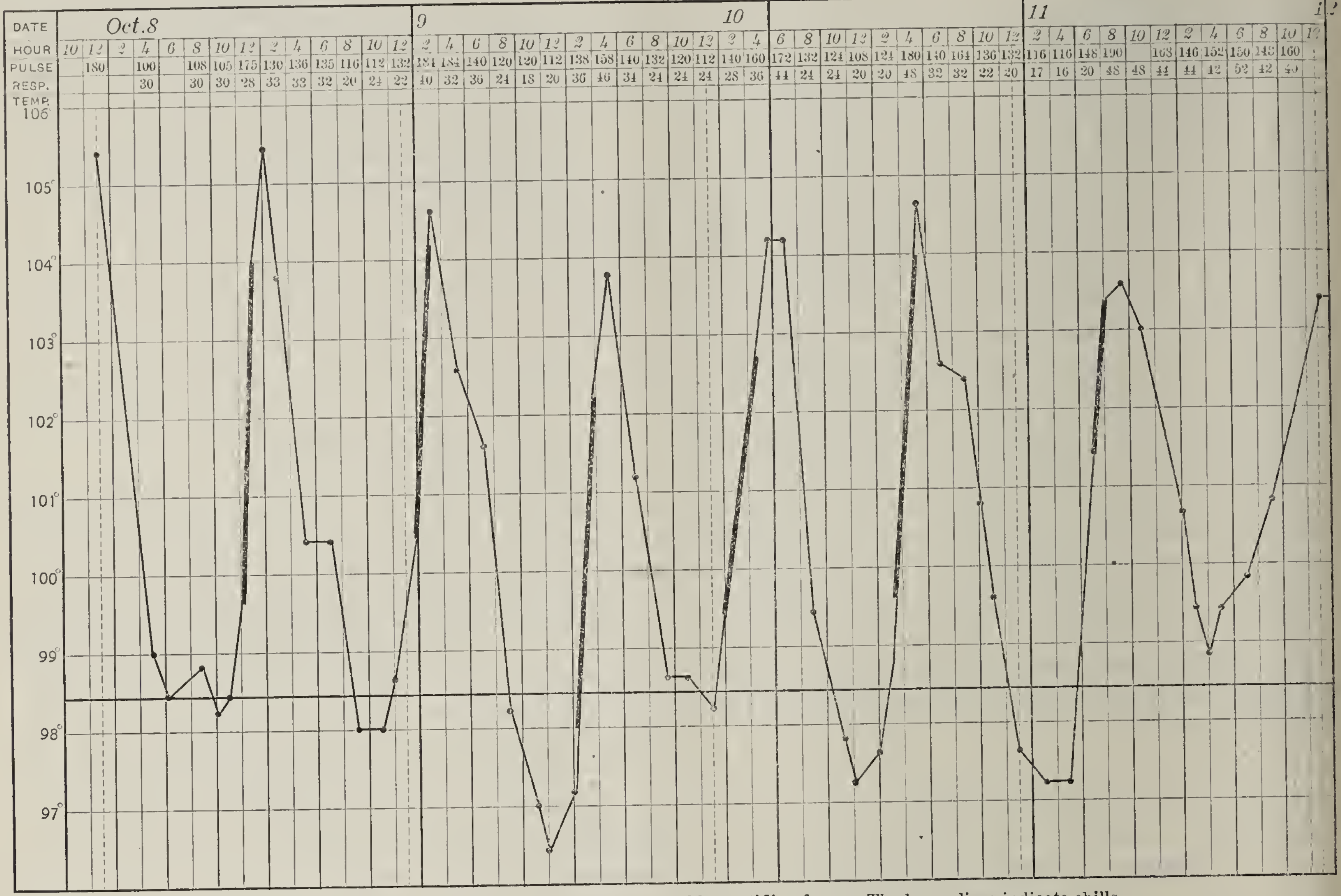
* *Boston Medical and Surgical Journal*, November 7, 1895.



Temperature curve from case of endocarditis with double quotidian fever. The heavy lines indicate chills.

Moderate rigor mortis. Frame slender; musculature greatly wasted; thin panniculus. The skin is slightly icteric; sclerotics plainly so. Numerous ecchymoses over thorax and abdomen. Post-mortem discolorations over back and dependent parts of limbs and genitals. Small erosions over left knee and outer side of right foot. There is slight œdema over the whole body, most marked over the lower extremities.

In the median line, over vertex, there is a scar about an inch long and half an inch wide.

Skullcap moderately thick; in the outer table, corresponding to location of scar, there is a slight depression. The inner table is smooth and even. Diploë very bloody. The dura is distended, slightly thickened, but not especially so in region corresponding to external scar. The superior longitudinal sinus is full of dark, fluid blood; the lateral and petrosal sinuses contain yellowish clots. Vessels of pia are greatly congested, the membrane somewhat thickened and œdematous. Through the membrane can be seen a yellowish discoloration in the cortex of the left temporal lobe with a slight depression of the surface. The pia is adherent. The meninges at base of brain are slightly thickened and œdematous; there is no exudate. The walls of the carotid arteries are slightly thickened. In the left carotid there is a firm white thrombus filling the lumen, but not firmly adherent, about a third of an inch in length. The cerebral arteries are empty. In the lower part of the left temporal lobe there is an area of degeneration. In the cortex this has a diameter of four centimetres. It extends into the internal capsule and forward into the white matter beneath the island of Reil. The tissue here is soft, in parts almost fluid, yellowish-gray to dirty white in color. The lateral ventricles contain an increased amount of fluid. Other parts of the brain show no lesions. The medulla and cord reveal no degeneration.

The diaphragm on the right reaches to the fourth interspace, on the left to the sixth rib. The thyreoid is enlarged. There is marked colloid degeneration with numerous small cysts filled with bloody fluid. The examination of the tonsils, pharynx, larynx, and trachea is negative. The right lung is adherent over the base. In the lower lobe there is marked hypostatic congestion with slight œdema. There is moderate anthracosis. There are numerous adhesions over left apex and left base; otherwise as on right side. No scars, infarcts, or abscesses found in either lung. The bronchial glands moderately pigmented; otherwise normal. The heart is large, the apex extending beyond the nipple line. In the pericardium there is a small amount of slightly turbid fluid. The pericardium is smooth. The right auricle contains a large post-mortem clot. The right ventricle is slightly hypertrophied and dilated. The heart muscle is soft, slightly cloudy, and tears easily. The tricuspid and pulmonary valves present no lesions. The tricuspid orifice is rather wide. In the left auricle is a large mixed clot, extending into the pulmonary veins. The left ventricle is empty, the walls hypertrophied and slightly cloudy. On the auricular aspect of the mitral flaps, at the line of contact, are two yellowish, firm, but friable vegetations about the size of small cherries. These are firmly adherent to the endocardium. The aortic valves present no lesions.

The intima of the arch of the aorta shows a few small, slightly elevated, opaque areas. Examination of the œsophagus and thoracic aorta negative.

There is no fluid in the peritoneal cavity. The peritonæum is for the greater part smooth and shining. There are numerous adhesions in the region of the spleen, and here the peritonæum is cloudy and dotted with many small flakes of fibrin.

The liver is moderately enlarged, the edges rounded, surface smooth, the capsule not thickened. On section there are numerous large yellow areas (anæmic) alternating with areas of congestion. No increase of connective tissue. No abscesses. The gall bladder is empty; the ducts patulous.

The spleen is much increased in size, especially in thickness. The capsule is greatly thickened, being everywhere adherent to the structures about it. In the lower part there is a globular swelling, soft and fluctuating. While examining the organ this broke, and several ounces of thick, grayish-red and yellow matter escaped, showing the walls ragged and necrotic. The remaining parts of the organ are congested and contain multiple anæmic infarcts of various sizes, both old and recent.

Both kidneys are slightly enlarged; the surfaces show many cicatricial depressions. On section they bleed freely, are yellowish-red in color, and soft. In the cortex are numerous anæmic infarcts with hæmorrhagic borders. The cortex is of normal width; the boundary zone is not well marked. The surface is cloudy. The capsule is thickened, but adherent only over the scars of old infarcts. The examination of the ureters is negative. The bladder contains a small amount of urine. It and the urethra show no sign of disease.

The examination of the adrenals and the pancreas is negative.

The mucous membrane of the stomach is thickened and covered with a layer of mucus. There are numerous ecchymoses.

Mucous membrane of large and small intestines injected, and presents numerous large ecchymotic areas.

The examination of the abdominal aorta and lymph glands is negative.

Microscopic Examination.—Sections from the sofening focus in the brain show degeneration with slight eucocyte infiltration in the outer parts, but no abscess. Micro-organisms can not be found here nor in the clots rom the sinuses.

The thrombus in the carotid is a recent fibrin and eucocyte thrombus. No organisms can be found in it.

The vegetations from the mitral valve are made up f masses and meshes of fibrin, with necrotic cells, and ontaining numerous colonies of staphylococci.

The spleen and kidneys contain both simple anæmic nd septic infarcts; the broken-down and purulent maerial from the spleen contains masses of cocci in considrable number.

The liver shows slight central degeneration, small reas of necrosis, but no abscesses.

Cultures were made from the splenic abscess by Mr. eorge D. Perkins, under the direction of Professor F. G. ovy. They showed *Staphylococcus aureus* in pure culure. The cultures, as shown by inoculations in rabbits, ere of unusual virulence. This was also demonstrated y the fact that both Dr. Warthin and the student who ssisted him at the autopsy had abscesses beginning in the hair follicles on the fingers, with extensive necrosis, glandular enlargement, and in one case marked constitutional symptoms.

After the autopsy I obtained the following history from the patient's father, who was not accessible before: D. had scarlet fever twenty years ago, without sequels. Seven years ago he had sunstroke, and since then had not been able to work in the sunshine in hot weather. Two years ago he had influenza. With these exceptions was always well until thirteen weeks before death, when he had a severe chill and took to bed with what the doctor called "typhoid symptoms," and from the father's description they were indeed symptoms of the typhoid state. After taking quinine in "full doses" (exact amount not known) for ten days the patient lost his speech. In a week this was gradually restored. The typhoid symptoms lasted three weeks. After they subsided the patient improved, but did not regain his strength. He had attacks of chills and fever, lasting about a week. There were never two paroxysms in one day until the last attack. Shortness of breath was not noticed until about twelve days before death. It was before this last illness that the alleged injuries were received. It is possible the patient had slight attacks of cerebral anæmia, with falling, which suggested the history given by the family prior to admission. There was no permanent paralysis, however, until the last illness came on with the early appearance of mental symptoms which made impossible the confirmation of the alleged aphasia.

This history, given without any leading questions, is in perfect agreement with the results of the autopsy. The fevers of typhoid and intermittent character were, almost beyond doubt, evidences of the septic condition. The mode of infection could not be discovered. Venereal disease was denied and the autopsy gave no sign of the point of origin, so that this must be included among cryptogenetic cases. The idea that the primary focus was in the brain must be given up in the light of the histological examination.

The diagnosis of pyæmia was evidently as accurate as could be made when the patient came under observation, although it can hardly be doubted that at an earlier period a heart lesion could have been recognized. There are, of course, cases of malignant endocarditis without symptoms on the part of the heart, as Leyden * showed long ago in a classical article. But in the present case, although loss of compensation was probably not present, I can not doubt that a murmur existed before the heart became weak. The position and shape of the vegetation resembled to a remarkable degree those features in Case I of my former paper, in which there was a very loud murmur. In the case of D. such a murmur, with the slight enlargement, the suspicious history, the temperature curve, and the negative blood examination, would have enabled one to recognize the cardiac affection. But the weakness of the heart, its rapid action, and the restlessness of the patient in his final illness, all conspired to make impossible an accurate examination, and, though septic endocarditis was considered, it seemed more probable there was pyæmia without a special, or at least a primary, affection of the heart.

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* *Zeitschrift für klin. Med.*, Bd. iv.

This case furnished a striking evidence of the value of the blood examination in excluding a suspected malarial infection. The temperature curve is certainly a striking one, and, of course, at once suggests malaria. It is an interesting fact that although many writers, especially the older ones, mention the double quotidian type of malarial fever, actual cases seem to have been rarely observed.

Graves * reported an extraordinary case which he thought was of that kind. "Mary Gannon, aged forty-four years, was attacked by intermittent fever. The paroxysms occurred twice every day, one in the morning, the other in the afternoon, for the space of ten days, after which, owing to medical treatment, the evening paroxysm disappeared." About a month after the beginning she came under the care of Dr. Stokes, "who prescribed small doses of quinine. The fit became tertian, but soon returned to the quotidian form." She was then put on large doses of quinine by Graves. In a week the fits became tertian again, and so continued for ten day, notwithstanding thirty grains of quinine daily. "She was then blooded to eighteen fluidounces, by which the duration of the paroxysms was lessened, and the interval increased by twelve hours. She was again blooded, and the fit became quartan. Venesection was employed three times more, but without any other sensible effect than a curtailment of the duration of the existing paroxysm. Her strength now became reduced, and she was ordered to take four drops of the liquor arsenicalis in half an ounce of mint water, three times a day. Since she commenced taking the arsenic the violence of the paroxysm has been gradually subsiding, and strength and appetite are returning; at present the fit presents scarcely any other characters than those of a slight shivering." Whether this was a malarial affection is, of course, impossible to say. I have quoted the account partly to show the heroic treatment pursued.

In the *Transactions of the American Medical Association*, 1852, vol. v, pp. 395–433, Dr. William M. Boling, of Montgomery, Alabama, reported six double quotidians among a thousand and thirty-six cases of malaria of all kinds. No instance of this kind appears to have been observed in the armies during the civil war.

Golgi † has reported a most interesting case in which a patient had a triple quartan and double tertian infection. The diagnosis of the type was made by the blood examination and confirmed by the thermometer. The temperature was remittent, however, except when a mild tertian and severe quartan paroxysm came on the same day, the former in the morning, the latter in the afternoon.

Schellong * gives the chart of a case of double tertian showing two paroxysms in one day, but says such cases are rare.

From my own experience I should say that in severe malarial infection it is not extremely rare to see two paroxysms in one day. More frequently one may see a remittent curve with two summits, without distinct paroxysms. But these rarely return day after day, even if quinine is withheld. Usually in such cases quinine is soon given, so that a prolonged course is rarely observed.

In septic fever, on the contrary, repeated paroxysms in twenty-four hours are not rare. Graves (who, it is true, took twelve hours as the unit of [malarial] ague fits, for theoretical reasons which are now known to be erroneous) said "the hectic fever notoriously has intervals of twelve hours."

Litten † gave some histories of septic disease, in which repeated paroxysms occurred in one day. Before this Traube ‡ was familiar with similar phenomena and used them in diagnosis. (Traube went too far in his generalizations on this subject, but his observations were of great importance.)

Leyden # mentioned the possibility of two paroxysms in one day, in septic endocarditis, and gave curves showing such conditions.

The marked intermissions of septic fever, with or without a rhythmical course, do not depend on a peculiarity of the germ, so far as we can discover. In staphylococcus (aureus and albus) infections both continued and intermittent fever may be observed in different cases.

It seems worth mentioning that my patient had no history of genuine malarial fever at a previous time. He did not live in a malarial district; his organs showed no evidence of old malarial disease. The idea that previous malarial affections produce an intermittent tendency, so that in those who have once had malarial intermittent fever other diseases afterward acquired show intermissions, is still widespread. Thus Dr. C. Gross,‖ in reporting a case of endocarditis, says of the so-called malarial type: "It is not unreasonable to suppose that when the disease has followed malaria the previous attacks of fever have some effect upon the character of the temperature," and further: "The attacks may be supposed to have left their stamp upon the heat centres, so that when these centres were upset there was a tendency to act upon certain lines." Plausible as this sounds, and oft-repeated as it is in medical literature, it is with-

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* *Clinical Lectures on the Practice of Medicine*, New Sydenham Society's edition, vol. i, p. 408; also Gerhard's edition (third American), 1848, p. 196.

† *Fortschritte der Medicin*, 1889, p. 93.

* *Die Malariakrankheiten*, etc., Berlin, Julius Springer, 1890.

† *Zeitschrift für klin. Med.*, Bd. ii.

‡ *Gesammelte Beiträge zur Path. u. Physiol.*, iii, p. 270.

Zeitschrift für klin. Med., Bd. iv.

‖ The *Lancet*, 1893, vol. i, p. 724.

out scientific proof. Against it is the absence of an intermittent tendency in a large proportion of persons who have had malaria. Moreover, when a patient has a malarial infection combined with some other disease, the course is not necessarily made distinctly intermittent.

But if the intermittent type alone does not prove the malarial character of the disease, it may still be supposed there may be something about the paroxysms themselves by which one can recognize their essential character. This too proves to be fallacious. Neither the peculiarities of the temperature curve nor the other symptoms of the paroxysms can be depended upon.

In the case now reported the absence of sweating was a remarkable feature. This may happen in both malaria and sepsis, but is perhaps more common in the former, so that in a doubtful case the absence of sweating is usually looked on as proving the absence of sepsis. The case now reported shows how fallacious this would be.

The question as to malaria can be settled by an exmination of the blood, as was done here. As has long een my custom, the blood was examined before makng any investigation into the history or the ordinary ymptoms. The result would have been of more imnediate value had such an examination been made arlier, say when the quinine was first prescribed, but he lesson may not be too late to be of value. It must e remembered that even in non-malarial localities there enough possibility of an infection of that kind to make ecessary the microscopic examination in all cases imulating malarial disease.

Incidentally the present case illustrates some imortant points of a general kind. Notwithstanding the umerous articles in every country and by authorities of e highest rank during the last half century, it seems npossible for many to realize that intermission does ot always mean malaria.

A striking example of the confusion of thought on is subject is illustrated in a place where errors of all nds are remarkably rare. In my former paper I used e title Endocarditis and Intermittent Fever, thinkg that a misunderstanding would be impossible. (For me time we shall in all probability refer cases of magnant endocarditis among diseases of the heart rather an according to an ætiological classification.) Hower, in the *Index Medicus* this article appears under alarial Diseases.

In close relation to the diagnostic and nosological ror is a therapeutic one. Quinine is still given by ny in diseases with chills or with intermissions, even those who do not consider that the cases so treated malarial. The idea still prevails that quinine has ne peculiar antiperiodic properties, though it is now own that the antiperiodic action so striking in maia is only an accident due to the cessation of the iodic symptoms caused by the parasites that the nine has the power of rendering harmless.

Finally, the case shows the disadvantage of using quinine as a therapeutic test, so called. It will often be necessary to administer quinine when a microscopic examination of the blood can not be made. While this may sometimes be necessary in practice, it is not permissible to draw dogmatic conclusions of a pathological or diagnostic kind from the results. The microscope, not a drug, should be our guide to the diagnosis of all cases of suspected malaria.

The high degree of leucocytosis in the case here reported is a matter of some interest, especially with reference to an idea rather prevalent that marked leucocytosis in septic disease is usually an evidence of the relatively slight virulence of the microbes. In this case both the symptoms and the bacteriological examination reveal a high degree of virulence of the germs, nor does it seem as if the leucocytosis can be considered an "agonal" one.

FOUR CASES OF

VESICAL CALCULUS REMOVED BY LITHOLAPAXY UNDER LOCAL ANÆSTHESIA.*

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I DESIRE to present for your consideration the report of four cases of vesical calculus, upon which I have recently operated by litholapaxy, using cocaine locally as an anæsthetic.

The technique employed has been the same in each operation, and is as follows: The patient's bowels having been emptied, he was given, half an hour before the operation, a subcutanous injection of a sixth of a grain of morphine and a hundredth of a grain of atropine, and fifteen minutes later he was given an injection of a fiftieth of a grain of glonoin and a thirtieth of a grain of strychnine. He was then placed upon the table and the bladder emptied and thoroughly washed with sterile borax solution. Two ounces of a four-per-cent. solution of cocaine hydrochlorate were then injected into the bladder, the catheter being withdrawn into the prostatic urethra, so that the solution should be brought into contact with the deep urethra. The anterior urethra was then filled with two drachms of the cocaine solution, which was retained for five minutes. At the expiration of this time the anæsthesia was complete. The lithotrite was then introduced, the stone fragmented, and the detritus removed by the evacuator in the usual manner. In all four of the cases thus treated the anæsthesia was complete and remained practically so until the end of the operation. In two of the cases in which the operation was prolonged, in one for forty minutes, in the other for an hour, some discomfort was caused during the last few minutes of the operation by the use of the evacuator; but at no time did the patients complain of pain sufficiently severe to require a renewal of the anæsthetic. In the other two cases, in which the operations lasted twenty-five and twenty-eight minutes respectively, there was an entire absence of pain and discomfort. All of these operations were performed upon old men. Three of them had obstructive enlargement of the prostate; the fourth had been operated upon by me three years before for prostatic enlargement, and the entire prostate was at that time removed by submucous enucleation together with about fifty prostatic calculi.

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* Read before the Society of Alumni of Bellevue Hospital, December 2, 1896.

Three of these patients had general arterial sclerosis and chronic nephritis, and were exceedingly bad subjects for any operation requiring a general anæsthetic.

In none of the cases were any bad effects observed from the cocaine. In the first case operated upon the patient was somewhat excited during the first two or three minutes of the operation, but this very soon disappeared.

There was in one case a slight acceleration of the pulse, amounting to an increase of ten or fifteen beats in the minute. In two of the cases the operation was performed late in the afternoon, and the patients were wakeful during the night. In three of the cases the operation was difficult, owing to the large size of the prostate. The time required to perform these operations was a little longer than would have been taken had a general anæsthetic been used.

The preliminary treatment in these cases—viz., the use of full doses of glonoin and strychnine—was employed at the suggestion of my colleague, Dr. Hermann M. Biggs. I believe it to be of value in counteracting the dangerous action of cocaine upon the heart and circulation. It certainly acted well in the cases under consideration. There can be no question of the value of local anæsthesia in cases of calculus in which the blood-vessels and upper urinary organs are diseased, and I believe that litholapaxy in these cases can be much more safely performed under local anæsthesia than any other operation.

CASE I.—T. B., aged eighty years. I was asked to see this patient by Dr. W. W. Varrick, of Jersey City, in September, 1896. He gave a history of prostatic enlargement of several years' duration, and had had well-marked symptoms of vesical calculus for more than six months. He complained of great frequency of micturition and of pain before and after it, the latter being especially severe, of a burning sensation along the entire urethra, of sudden stoppage of the stream before the completion of the act, accompanied by pain at the end of penis. He was obliged to pass water every half hour, day and night, and was rapidly losing ground. He was using a catheter once daily, and was washing his bladder twice a week with a solution of borax.

His urine was loaded with pus, and deposited on standing a tenacious mass of altered pus and phosphates; specific gravity, 1.019; reaction alkaline; odor ammoniacal. It contained albumin, pus, blood, crystals of triple phosphates, and amorphous phosphates; no casts were found. Rectal examination showed a symmetrical enlargement of the prostate. Residual urine two ounces. Capacity of bladder two ounces and a half. The mucous surface of the bladder was trabeculated and exceedingly sensitive. A calculus about an inch and a quarter in diameter was detected by the searcher. The patient's arteries were hard, and his pulse feeble and intermittent.

I prescribed rest in bed, a fluid diet, large quantities of diluents, and vesical irrigation twice daily with solution of nitrate of silver, 1 to 6,000. On September 28th Dr. Varrick reported that the patient's bladder had improved and that he was ready for operation. On September 29th I did a litholapaxy under cocaine anæsthesia, removing one hundred and thirty-six grains of calculus, mixed uric acid, and phosphates.

The operation was difficult, as the posterior prostatic pouch of the bladder was very deep, and each fragment of the calculus had to be picked up from the bottom of this pouch and then crushed. The last fragment was found with difficulty, and this delayed the operation some fifteen minutes.

The operation was entirely successful. A search made ten days after the operation showed the bladder to be free from calculus. The patient uses a catheter twice daily and washes the bladder with mild silver solution. He is free from pain, and sleeps the entire night without passing water.

CASE II.—I. F., aged seventy years, was referred to me on September 27th, by his physician, as a case of prostatic enlargement, with a request that I perform a prostatectomy. The patient had suffered for ten years with frequent micturition and pain. He had twice had retention, and had been taught to use a catheter and to wash his bladder, which he did at irregular intervals. For more than a year past he had had well-marked symptoms of vesical calculus, pain at the end of micturition, sudden interruption of the stream, followed by pain at the end of the penis, frequent desire to urinate, and, at times, bloody urine. The patient was thin and haggard: his blood-vessels were hard; he had a mitral regurgitant murmur, with increased area of cardiac dullness; heart sounds feeble. Rectal examination showed a moderate enlargement of the prostate. The urine was very dirty, with a thick and tenacious sediment; specific gravity, 1.016; reaction alkaline; odor ammoniacal; albumin in considerable amount, pus, blood, and amorphous phosphates, and a few granular casts. The capacity of the bladder was four ounces. Residual urine, two ounces and a half.

A calculus about an inch and a half in diameter was detected by searcher. I operated on September 30th and removed one hundred and forty-eight and a half grains of phosphatic calculus under cocaine anæsthesia. Time of operation twenty-eight minutes. There was absolutely no pain during the operation, and the soreness of the urethra, caused by the instruments, had disappeared on the fourth day. Patient walked to my office on the seventh day and was searched. The bladder was found free from calculus. He now uses catheter twice daily and washes his bladder with a weak solution of the nitrate of silver. The urine still contains some pus.

CASE III.—J. G. S., aged seventy-three years, was admitted to my service at Bellevue Hospital on October 5, 1896, with a diagnosis of prostatic enlargement and vesical calculus.

His symptoms began nineteen years ago with frequent desire to micturate, pain and burning in the urethra; both of these symptoms being aggravated by jolting. He had had frequent attacks of hæmaturia, the blood passing at the end of the act of micturition. The stream was suddenly arrested before the completion of the act.

He states that when these symptoms first appeared he called in a physician, who gave him internal remedies, and that he obtained relief for nearly a year. He had since then had several similar attacks, lasting from four to six weeks, and had been medically treated during these periods. For some months past he had been using a catheter and having his bladder washed out. Nine weeks ago he had an especially severe attack, accompanied by complete retention of urine. Dr. M., who treated him during this attack, relieved his retention, and, detecting the presence of a vesical calculus, advised him to come to the hospital. On admission the patient complained of great frequency of micturition, severe pain both before and after urination, urgency and partial incontinence, and burning along the entire urethra.

Rectal examination showed a large soft prostate. The capacity of the bladder was eight ounces. Residual urine four ounces. The surface of the bladder was very rough and extremely sensitive. A large calculus was detected with the searcher. The urine was very plentiful; specific gravity, 1.010; alkaline; it contained albumin, a large quantity of pus and amorphous phosphates, blood, and a few granular casts. Examination of the chest showed an enlarged heart, the apex beat being displaced to the left, and the area of cardiac dullness increased in size; no murmur heard; the heart sounds were weak.

Lungs slightly emphysematous.

There was well-marked general arterial sclerosis, the vessels being very hard and the pulse at the wrist incompressible.

The patient's condition was weak and feeble, and was most unfavorable for any operative measure. Owing to his great suffering, however, an operation was decided upon, and was performed before the class at my clinic on October 8, 1896. The operation was exceedingly difficult, owing both to the large size of the prostate and to the existence of a large diverticulum on the left side of the bladder, discovered after the operation had begun, into which fragments of the calculus fell and could not be removed by the evacuator. In attempting to remove all of these the operation was prolonged to nearly an hour. Six hundred and thirty grains of detritus of mixed urates and phosphates were removed. The anæsthesia was complete until the last two washings; the patient then had some discomfort, but at no time during the operation did he complain of pain.

On the day following the operation he had complete retention, due to swelling and congestion of the prostate, as the result of the operation.

On October 12th he began to show symptoms of uræmia, was somnolent, and delirious in a mild way. His pulse became rapid and feeble. He was freely stimulated, and on October 16th was much improved. His delirium had disappeared, and he sat up in bed during the afternoon. During the night of this day, however, he died suddenly.

The autopsy was performed by Dr. Brooks, of the Carnegie Laboratory, who has furnished me with the following protocol:

John S., Third Surgical Division, Bellevue Hospital, October 17, 1896. Nutrition poor; emaciation very marked. Rigor mortis present. Brain: Numerous and extensive areas of old meningitis; dura much thickened and adherent to bone. Submeningeal œdema.

Brain tissue soft, ventricles moderately distended by clear fluid normal in appearance. Arteries of brain show many small miliary aneurysms and extensive arteriosclerosis. A small aneurysmal dilatation (calcified) on left middle meningeal artery has nearly eroded through the calvaria, and many smaller aneurysms of same artery have imbedded themselves in the bone.

Heart: Weight twelve ounces; valves thickened and covered by patches of calcification. Muscle soft and flabby. Marked arteriosclerosis of coronary arteries.

Lungs show emphysema with chronic congestion.

Abdomen: Cæcum is folded back on ascending colon and bound by many adhesions to lower surface of liver. Vermiform appendix is bound to posterior wall of cæcum and is involved in an extensive mass of old adhesions; no evidences (direct) of perforation are found; mesenteric glands slightly enlarged.

Stomach: Small in size, distended with gas. Walls thickened and thrown into folds; color dark; mucous membrane shows extensive chronic inflammatory changes.

Pancreas negative.

Liver: Weight two pounds; small in size, of fairly firm consistence; surface smooth; color, purple with yellowish markings.

Gall bladder distended by single large oval stone about an inch and a quarter long by an inch wide; wall of bladder is thickened; duct is perforated.

Spleen small; capsule thickened.

Urinary System: Kidneys small; weight of each, two ounces; firm in consistence; capsule thickened and adherent; surface wrinkled; cortex thin; markings indistinct and irregular. Blood-vessel walls thickened; dark plum color; granular surface; extreme congestion, especially marked at borders of pyramids; œdema.

Bladder contracted; wall greatly thickened and thrown into folds; mucous membrane dark, showing numerous old inflammatory areas. Four distinct sacculations of wall are found in the neighborhood of the trigon, and several depressions and areas of scar tissue in same locality; the sacs contain small fragments of broken stone in considerable quantity. The larger of the sacculations of the bladder wall have distinctly constricted necks, just posterior to middle lobe of prostate, as an area of ulcerating surface the size of a half dollar, evidently caused by the irritation of the calculus, which seems to have rested in this region. No lesions of either urethra or bladder which could have been caused by instrumental interference are present.

Direct cause of death would seem to be the acute or chronic nephritis. HARLOW BROOKS.

CARNEGIE LABORATORY, *October 17, 1896.*

CASE IV.—C. B., aged fifty-seven years. On January 22, 1894, I performed prostatectomy upon this patient, and removed at the same time about fifty prostatic calculi. He was discharged from the hospital cured, on March 22, 1894. He could then empty his bladder perfectly.

After leaving the hospital he was perfectly well until January, 1895, when he began to have pain in the right side, over the course of the ureter; this pain, which was not very severe, continued until March, 1895, when he had what he describes as an attack of "grippe." He was relieved of the pain after this attack, but noticed that he had to urinate more frequently, and at times he had pain after the completion of the act. These symptoms have continued up to the present time.

Six weeks ago he was seized with a sharp, sudden pain in the scar of the suprapubic wound, which continued for about ten minutes. Three weeks later a sinus opened in the middle of the scar, and on November 17th a little urine escaped from this sinus.

He was admitted to my service at Bellevue Hospital on November 26, 1896. Examination showed a small sinus about the middle of the suprapubic scar, through which a few drops of urine escaped during micturition. The patient complained of some frequency in micturition, and of pain when the act was completed. There were only three drachms of residual urine. A calculus two inches in diameter was detected by the searcher. On November 27, 1896, I operated under cocaine anæsthesia, removing two hundred and seventy-five grains of calculus with the greatest ease. The nucleus was a uric-acid calculus with a thick phosphatic envelope. The patient has made a good recovery, and sat up on the fourth day. I propose later to close the suprapubic fistula.

In closing, let me say that litholapaxy operations under cocaine anæsthesia have been extensively performed by Dr. George Chismore, of San Francisco. Dr. Chismore, however, in cases of enlarged prostate complicated by calculus, does not attempt to remove the entire stone at a single sitting, but performs in these cases lithotrity in several sittings, removing with the aspirator the fragments crushed at the end of each. He uses local cocaine anæsthesia in all cases.

No. 5 West Fifty-eighth Street.

ANGEIONEUROTIC ŒDEMA.

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A case which I have lately seen, presenting some of the peculiar symptoms of this disease, has led me to look up this subject in more detail than it is found in the larger text-books of medicine. In the older text-books the subject is not dealt with, and it is only within the past ten or fifteen years that a number of comprehensive papers have appeared by different authors in various countries, describing this affection in many of its manifold appearances—one can not say in all of them, for, like other neurotic affections, it is differently characterized in different patients.*

I have started out by calling it a disease, and yet, more properly speaking, it is only one of a group of symptoms found occurring under various conditions.

The number and variety of names under which this condition has been described are a mark both of our ignorance as to the changes bringing it about and of its varied symptomatology. I have noted a dozen or more different synonyms, which, however, do not form a complete list: (1) Angeioneurotic œdema, (2) localized transient œdema, (3) acute subcutaneous œdema, (4) acute circumscribed cutaneous œdema, (5) fugitive cutaneous œdema, (6) acute idiopathic œdema, (7) creeping œdema, (8) ephemeral congestive cutaneous tumors, (9) acute periodic swelling, (10) urticaria tuberosa, (11) giant urticaria, (12) acute non-inflammatory swelling, (13) acute essential œdema, (14) neuropathic œdema, (15) vasomotor œdema, (16) acute circumscribed œdema. This list gives a number of the most prominent symptoms seen in the affection, but does not include all which are met with, as will be seen later on. Such an extensive symptomatology only adds to the interest of the disease, and should prepare us to see it at any time. It is this symptomatology which interests not alone the medical man and neurologist, but also the surgeon, pathologist, and even specialist in ocular affections.

Single cases have been described since Sydenham wrote, and yet to-day the underlying condition is but little better understood than it was earlier; all the signs are better known and the affection is easily recognizable, but the real cause is as yet hidden. Angeioneurotic œdema, as I shall speak of it in this paper, seems to me the best name for the affection; the œdema is the prominent symptom always; it is the sign which calls our attention to the others associated with it, and is a better word than tumor or swelling. That it is due to some disturbance in the nervous control of the blood-vessels seems almost certain—is, I may say, certain—so that the term angeioneurotic is the best one to apply, though we are still in ignorance as to the exact pathology. The little that we know about the pathology of the affection I shall discuss later.

Angeioneurotic œdema, then, may be said to be an affection characterized by the appearance of one or more circumscribed local swellings of varying size on any portion of the body. These may be associated with certain gastric symptoms to be described later on, or the effusions may be the only sign to be seen. An exact definition can not be given, for the disease is marked by a group of symptoms of which œdema is the most characteristic.

This disease, for so it is generally considered, occurs throughout the world, so far as is known, among men, women, and children. It may occur at any season, and is just as often seen in summer as in winter, nor does the weather have any appreciable significance in causing the affection. Some authors say it is more common in men than in women, but, in looking over a large number of cases, the proportions would seem to be about equal for the two sexes. Ballenger, writing in the journal *Medicine* for February, 1896, says that "in Germany and France about two females to one male are subject to it, while in England and America the numbers of cases in each sex do not differ materially." The whole number of cases yet reported is not very large, so that no very exact statistics can be drawn up. From a study of the disease there is no reason evident why one sex should be more affected than another, and yet it would seem more natural were women affected somewhat oftener that men, since the nervous equilibrium of women is more likely to be disturbed than that of men. Cases have been reported at all ages, from babies two and three months old to people eighty and ninety years of age, but the most common period would seem to be that extending from the age of puberty to middle life. The individual may be attacked at any time of the day or night, though more frequently the attacks come on during the day—and, at other times, a patient may wake up to find himself affected by this strange malady.

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* The best papers on this subject are those of Quincke, Milton, Osler, Graham, Fleischer, Riehl, Collins, Lovett, and others to be mentioned in the course of this paper. The number of interesting cases recorded increases annually, and many of the facts stated in this paper are gathered from the descriptions of individual cases.

Its ætiology is very varied, and shows either that we have not found the real cause, or that, as in other neurotic or hysterical conditions, the disease may be brought about by a variety of causes.

Predisposing causes, as given by Ballenger, are: Heredity; ill-health (past and present); overwork (mental and physical); exhaustion due to disease, exposure, or exertion, and a neuropathic taint. As exciting causes, he enumerates exposure to cold; gastric irritation, due to ingestion of poisonous articles of food (*e. g.*, strawberries, shellfish, apples, oatmeal, etc.); puberty; the climacteric; masturbation; trauma; fright; toxic agents (alcohol, tobacco) and auto-intoxications. Other authors give certain reflex causes, such as affections of the ear (in one case related by Ramsay-Smith to which I shall call attention later), or affections of the uterus and kidneys. Hysteria, hystero-epilepsy, and neurasthenia have also been adjudged the basis of the trouble. Catching cold and sudden chilling of the skin have brought on attacks, and even constipation has been looked upon as causative. That cold may bring on typical attacks is proved by numerous cases where the œdema was first noticed after a chilling of the skin, and which was afterward provoked by the same influence. An interesting point in this connection is the fact that after œdema has been once brought about in this manner it not only is apt to recur, but is not limted to the spot originally affected, but may occur in other portions of the body as well. Exposure of one side of the face to a draught may bring on a severe attack, as may also immersion of the hands in cold water. These are the ordinary causes which are made attributable for a large variety of affections—they all may produce certain pathological changes in the sysem, and so tend to reduce the normal resistance of the body and render it liable to be attacked in a multitude f ways.

The morbid anatomy of the affection consists in cerain lesions of the skin best characterized by the word wheal; but where the œdema occurs in loose subcuaneous tissue, as about the eyes or on the backs of the ngers, there may be no real wheal produced. These lesions vary much in size: they may be no larger than a cent, or even smaller, or they may involve an entire forearm, a whole leg, or, in very exceptional cases, may affect the entire body. The true wheal is the counterpart of that seen in urticaria, and when associated with itching the malady can not be distinguished from urticaria. The wheal is at first pink in color, but as it swells, fades, becoming quite white or yellowish, but being surrounded by a narrow pink zone which fades rapidly off into the color of the surrounding healthy skin. The wheal is generally sharply circumscribed. There are at times true subcutaneous tumors, not involving the cutis vera, and the mucous membranes of the body may also be affected.

From what has already been said of this disease it will be easy to gather certain of the most prominent symptoms. In fact, it is almost impossible to describe this affection in a logical manner; each author in describing it is influenced by that condition which he thinks is of the most importance, so that the order of description readily varies. Though a simple and, if I may be allowed to use the word, a "pure" angeioneurotic œdema may occur without any other signs than that of œdema in various parts of the body, yet it so frequently is associated with symptoms which appear to be of gastro-intestinal origin that these are now looked upon as almost a necessary concomitant. They are marked by malaise, headache, and nausea, or, in the more severe attacks, by mental confusion, vomiting, severe colic, and diarrhœa. The colic may be so severe as to require morphine to relieve the pain. Constipation and diarrhœa are both seen in this affection, and an attack may be preceded by thirst. The vomiting is not usually persistent; and the vomit is made up simply of the food in the stomach, mixed possibly with some bile. Another very marked feature in a certain number of cases is the hereditary tendency of this disease—the best instance has been related by Osler, who has seen it appearing in five generations; but other authors have also noted this, among them Strübing, who thinks this affection may be inherited like any other neurosis.

The œdema, as I have said, may affect any part of the body—head, trunk, and limbs, and also the larynx, pharynx, uvula, stomach, intestine, lungs, brain, and retrobulbar tissue. The implication of the lungs and brain has been doubted by some, but there is good reason to suppose these organs as well as the others may be involved. Collins, in a paper which appeared in the *American Journal of the Medical Sciences* in 1892, has tabulated the frequency with which the œdema occurs in different parts of the body, but there is not much help to be drawn from these statistics. The cheeks, lips, tongue are very frequently affected, as also the eyelids; half a lip or half the tongue only may be attacked, and the genital organs with their loose connective tissue are also frequently the seat of effusion.

The œdema is never inflammatory, and is considered by some authors as a vasomotor trophoneurosis. Position of the body has no effect on this variety of œdema. With the appearance of the swellings the rate of the pulse may increase and the temperature may rise as high as 102° to 103°, but this is uncommon, and the body temperature is not affected usually—nor is the temperature of the part affected higher than that of the unaffected skin. The swellings may be preceded by slight numbness, tingling, redness, and heat, but when they are developed they are neither painful nor red nor hot. At their height they may itch excessively, and when this occurs the affection can not be distinguished from urticaria. I shall have more to say about this in discussing the differential diagnosis.

The swellings are hard, and the œdema does not pit on pressure, or only very slightly. The swellings may or may not occur at regular intervals and regular hours. The well-known case of Matas has been frequently referred to in this connection; the œdema recurred every day for a long time at a given hour. Other cases are to be found in the literature where the periodicity is marked, though not quite so regularly as in this case. Gervaert has reported a very similar case to that of Matas, where a tumor occurred at the same hour for several days in a child of three years, during an attack of whooping-cough; the tumor disappeared when the child recovered from the cough. Henoch also has reported similar cases. The swellings appear suddenly and usually disappear as suddenly after a few hours, or they may last for days and weeks. They are apt to recur, and the same parts are usually attacked more than once. As the swelling fades in one part it may appear simultaneously in another, so that the patient is never quite free of œdema somewhere. An area of skin may swell which lies in close proximity to one just fading, and this has given the name of " creeping urticaria " to this affection. Several parts of the body may be affected at once.

When the œdema appears about a joint there may be slight effusion into the joint, and, as this form is usually accompanied by pain, the œdema has been attributed to rheumatism; and these œdemas have been called "rheumatic œdemas," although there would seem to be no real causal connection between acute rheumatism and this affection. Mathieu and Veil, in the *Archives générales de médecine* for 1885, in a paper entitled Œdèmes neuropathiques, however, have attempted to bring arthropathies and neuropathic œdemas into close connection with one another. They state that œdema frequently accompanies arthropathies, and also that it is often of nervous origin. Sciatica and arthropathy have many similar symptoms; and arthropathy and œdema are to them symptomatic equivalents. May not there be, therefore, a common basis for both these different affections? The paper is an interesting one, but I believe it is better not to classify the œdemas associated with arthropathy with neuropathic or functional œdemas. We all know how tabetic pains and other true neuralgias may be followed by œdema, as is often the case in supraorbital neuralgia, which, when severe, may produce such œdema in the loose connective tissue of the eyelids as almost to close the eye, but whether the underlying cause is the same here as in angeioneurotic œdema is not known.

The condition may last off and on for years, and be at times of such severity as to threaten life or interfere with business; the tongue and pharynx or larynx may swell to such an extent as to make breathing very difficult and necessitate tracheotomy or scarification. Mettler in the *Journal of the American Medical Association* for October 24, 1896, relates two cases where the patients died of œdema of the glottis. When the disease presents such symptoms, it is, as I have said above, an affection to interest surgeons as well as other medical men, and trauma also is not at all an infrequent cause of the œdema. Graham relates a case of a man who, if he struck his hand or caught a ball, would be attacked by severe œdema in that hand.

The attack may come on in a person apparently perfectly well, without anæmia or cachexia of any degree or sort; the attacks may occur without any other feeling of indisposition, or they may be associated with depression and somnolence. They are sometimes ushered in with chills. Patients may be hysterical or neurasthenic, or show other signs of a disturbed nervous organization; but quite as frequently they show no other neuropathic taint. A number of cases have been associated with phthisis, but there would seem to be no clear connection between the two affections—they simply occurring concomitantly. The œdema usually is not so great as to be an inconvenience, but that it may be is shown by the case reported, in which the under lip was so swollen that the mouth could not be opened and food had to be poured in from above; or the fingers may be so swollen that the hand can not be closed, or that rings may have to be sawed off. A case occurred at the Hôtel Dieu in Paris, which affected only the regions about the eyes; it lasted for many years, beginning in early life and causing great inconvenience; no cause, under long observation, could be found to account for this. The eyes may be closed for days and even weeks; in some cases the conjunctiva may also be swollen, and œdema of face and head may be so extensive as to be very disfiguring. In individual cases, as in the one just related at the Hôtel Dieu, the œdema seems to have areas of predilection and always returns to those and no others.

In the case which I have under treatment the œdema has never been severe; there has been much puffiness about the eyes, the conjunctivæ have been swollen and red; the legs have been affected, more especially between the knees and ankles; and the backs of the fingers. The patient thinks the œdema is more marked in the left arm and right leg—a sort of crossed œdema. She has no gastro-intestinal symptoms, but frequently suffers from "nervous chills." At times she has sensations of suffocation, but these are within the chest and about the heart; not in the larynx or pharynx. Her pulse is small, feeble, and rapid. Her urine is normal. She is slightly anæmic, but the œdema in no wise resembles that due to anæmia. She is not hysterical, but has a marked neuropathic taint. She is a young woman; white; aged thirty-one years. Her family history and her past history throw no light on her present condition. She has suffered from this œdema for many years, but it seems to be no worse now than when it first commenced. She complains much of cold hands and feet, but this feeling is rather subjective than objective. In her case the condition most likely to aggravate an attack is overwork of a physical sort. The œdema does not seem to be connected with her digestion, or with any disturbance of menstruation; it is not affected by the weather. She is not very strong physically, and like so many other women lives largely on her nerves. She has also certain troubles which make her despondent, and so lower her vital resistance.

Evans, in the *Lancet* for 1895, relates a most interesting case, coming on in a woman whenever she was confined. The œdema was very extensive and associated with very severe collapse symptoms. Her thyreoid was slightly enlarged, but her heart and kidneys were normal, and there was no marked anæmia.

A case apparently due to a gastro-intestinal disturbance is reported by Fitzgerald in the *Edinburgh Hospital Reports* for 1893. It was one associated with severe diarrhœa, and œdema occurring in various parts of the body. The diarrhœa was proved to be due to oatmeal, but when this was quite checked the œdema persisted and was even worse, and no other source of the trouble could be found. The gastro-intestinal symptoms, when very severe, may be confounded with Leyden's so-called attacks of "periodical vomiting" (*periodisches Erbrechen*), but in this affection œdema is lacking.

Despite the fact of the very frequent occurrence of these attacks, the skin does not seem to suffer in any way, and the parts affected, when the œdema disappears, are apparently normal. Russell, however, gives an account of a curious case in the *Journal of Cutaneous and Genito-urinary Diseases* for 1893, where a man had an area of œdema in the right axilla. This disappeared entirely, and was followed a few days later by an abscess which had to be opened. In a few rare cases, however, the œdematous area may be studded with small blebs, and in one case reported by Ramsay-Smith in the *Practitioner* for 1894, the attacks were followed by desquamation. The case is one of such interest as to make it worth while to relate it in some detail. The case was seen in a woman who was frequently affected, her whole body being at times implicated. The attacks were brought on by various causes, such as carious teeth, uterine congestion, exhaustion, and cold. During them her temperature was slightly raised; her skin itched and was red in color. Complete desquamation followed the attack after two or three days, and lasted for a week or two. The patient describes her own sensations in the following words:

"The first sign of this trouble began in my ears with a strange noise, not loud. I felt them swelling. Then gradually my head felt strange as if it too was swelling. Then my whole body was affected. Sometimes I became very sick, at other times I swooned away and became almost unconscious, and for the first day or two of the attack, I always became quite giddy when I tried to raise my head. The heat in my head was fearful, and, in fact, over my whole body, but more especially in the palms of the hands. In a day or two the skin began to peel off, beginning with my head and face (my hair also fell out considerably) and gradually wearing down till it came off my feet, sometimes months after I was in my usual health."

Strübing says that the excretion of urine is diminished during attacks, and there may be slight albuminuria at the height of the attack, but this probably only occurs in the severe cases. Another rarely associated symptom is hæmoglobinuria, which has been noted by Joseph. Küssner has reported a case with bleedings from gums, bronchi, and bladder, where all the internal organs were apparently healthy. Paroxysmal hæmoglobinuria is frequently caused by cold, and the connection between it and angeioneurotic œdema in some cases would seem to be a close one, though we do not yet know what it is. It might also be difficult, in some instances where angeioneurotic œdema occurs with pain in the joints and gastro-intestinal symptoms, to distinguish it from Henoch's purpura—the only difference being the purpura, which may be slight, and may appear as an early or late symptom; and the purpura sometimes presents, as Osler says, the characteristics of an erythema multiforme, which angeioneurotic œdema may closely simulate. Though this form of purpura occurs usually only in young children and the spleen is apt to be enlarged, nevertheless, it looks as though there were some common underlying factor which is as yet hidden to us.

This brings up the question of differential diagnosis, and there are several interesting conditions from which angeioneurotic œdema has to be separated. But one word before I take up this point. Börmer, in Volkmann's *Sammlung klinischer Vorträge* for 1888, has a long paper on œdemas occurring as accompaniments of menstruation and the climacteric. It seems impossible to distinguish these from angeioneurotic œdema; they present no marked differences, except their more or less regular periodicity. They are also at times associated with neuralgias, which, as all know, are not uncommon at those times of women's lives. In all essentials they are the counterpart of angeioneurotic œdemas, and it only seems to complicate the matter to try to put them into a class by themselves.

Whether it is worth while or not to try to differentiate "hysterical œdema" from the angeioneurotic variety seems questionable. Practically it does not differ, except as occurring in markedly hysterical subjects, and being like all other hysterical signs very unstable. The skin is usually pink in color, smooth, and shiny; the œdematous area is hard, does not pit on pressure, and its temperature is warmer than the healthy parts. It is less apt to attack several regions at once, and the single areas are usually larger than in angeioneurotic œdema. The œdema may persist for days and weeks. It may affect any part of the body and simulate general anasarca (Charcot). There are intermissions in it, and it frequently returns. It is, however, associated with other marked hysterical stigmata, such as anæsthesia and hyperæsthesia of irregular areas of the body, and other vasomotor and trophic disturbances of the skin and body. Both the direct and indirect electrical excitability of the muscles may be quantitatively diminished. Under this heading of "hysterical" œdema, the white, blue, red, and variegated œdemas should be classed. These cases of "blue" œdema are quite apt to attack the breast (Shaw-Duryea). The blue color is simply due to a stasis or cyanosis (McCosh). "Dermatographia," that condition so often seen in hysterical subjects, may be classed as a form of angeioneurotic œdema.

When angeioneurotic œdema attacks the genital organs only, it must be differentiated from that form of "indurative" œdema, due to syphilis, which attacks the male and female genitals. The best paper on this subject is by Finger. This condition is more or less explained by the name; with it the glands in the neighborhood are enlarged; it is very hard, painless, and not associated with any rise in temperature. It may appear as one of the earliest secondary symptoms. It is apt to pursue a rapid course, and is not sharply circumscribed. The skin is reddish-brown in color and has the appearance of embossed leather.

If itching occurs with angeioneurotic œdema it can not be distinguished from urticaria, and by many authors the two conditions are considered to be the same. In Milton's now almost historic cases the itching was intense; and he gave the condition the name of giant urticaria. The description of urticaria, as given in Crocker's *Diseases of the Skin*, might be used as well for angeioneurotic œdema. Perhaps all that it is worth while to say in this connection is that some cases of angeioneurotic œdema occur without itching, and some cases of urticaria, as urticaria pigmentosa, should properly come under a different heading.

The œdemas due to heart or kidney disease, or to anæmias of whatever origin (chlorosis, hæmorrhage, malaria, etc.), are readily to be distinguished by a history of the case from angeioneurotic œdemas, and require no detailed description. Œdema following pressure of a tumor might for a time be confused with a localized angeioneurotic or hysterical œdema, but here the progress of the case and other symptoms would probably soon show the real cause of the trouble. The œdema consequent on neuralgias and paralyzed limbs may have the same underlying cause as the angeioneurotic variety, but should not be classed in the same group. Myxœdema and that form of œdema called in German *stabile Oedem*, or *stabile œdema*, which is due to a thickening of the skin following inflammation, need hardly be mentioned, as only through carelessness could they be confounded with angeioneurotic œdema.

It is hardly worth while to take up the diagnosis any more comprehensively than I have done in the previous pages; it is easily to be gathered from the symptoms described, and can not be put in a few words.

As to the prognosis, it may be said to be good for any given attack, but, owing to the fact that recurrences of the affection seem to be the general rule, prognosis as to ultimate recovery is bad. Any attack may be the last, or the attacks may continue off and on up to death. Occasionally, the œdema may be cut short by some intercurrent affection, as measles, pneumonia, etc. (Joseph), or, as in the case quoted above, it ended with the recovery from whooping-cough.

The treatment is unsatisfactory, and the best that can be done is to look after the general health of the patient; give tonics, and build up the system in all ways possible. Irritation of the gastro-intestinal tract and exposure to cold should be carefully avoided. The factor which makes treatment so difficult is the variety of causes which may produce an attack in any one patient, as is seen in some of the cases noted above. Tonics, ointments, lotions, electricity, baths, massage, etc., have been tried with varying success or no success. Where the itching is very intense the ordinary remedies for its relief may be tried; but the itching disappears as the œdema fades, and if this does not last long the itching can be borne without much discomfort, except when the surface affected is very large. Alcoholic drinks should be avoided, as, without doubt, they are in some cases a potent factor. I know of one case in this city where a man's whole body will swell, his hands, feet, and neck being especially affected, after small quantities of wine. In his case the œdema is associated with intense itching.

I have left to the last the question of the pathology of this affection; much has been written on this point, but, as yet, we are still in the dark. That œdema must depend and does depend on the condition of the vascular system is not denied now by any one; the vessels are controlled by two sets of nerves, the constrictors and the dilators, but, whether œdema is due to a paralysis of the constrictors or to some irritation of the dilators we do not know, and the results in either case are the same. How to account for œdema arising spontaneously in various parts of the body at one time or different times is impossible. Where it follows a blow, as on the hand, or exposure of a certain part to cold, some explanation would seem possible—as due to the sudden lowering of the normal resistance—but how to account for it following a gastro-intestinal irritation, without being a general irritant, is hard to see. Why it affects one spot instead of another; why one spot, and only one, is sometimes attacked; why is it sometimes associated with itching, and then again not?—all these are questions to be solved. The condition of the blood has been considered one of the causes of œdema; but it may be absolutely normal and œdema occur. We know experimentally that increase or diminution of the albuminous substances contained in the blood will not alone account for it; neither will hydræmia or hydræmic plethora. Experimentally, it has been proved also that unless the nerves controlling the blood-vessels are in some unknown way affected we get no œdema; the œdema occurs without lesion of the vascular wall as far as can be seen by the microscope, and so we are thrown back once more on the nerves as the ultimate cause of the trouble; but further than this we can not go. The local irritation is in most cases quite beyond our power of analysis, and it must be left to future observers to discover this if they can.

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THE NEW INSANITY LAW.

By CHARLES F. BOSTWICK, Ph. B., LL. M.,

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Two excellent articles reviewing the new insanity law from the standpoint of the physician, one by Dr. Jacoby and one by Dr. Parsons, appeared recently in this *Journal*, and so perhaps a word or two from one of the legal profession on the same subject might prove of some value.

It would be impossible to analyze the true causes which led to the radical changes which the Legislature saw fit to make in the law for the commitment of the nsane; but, whatever the moving causes may have been, t is clear to my mind that the Legislature has acted on an erroneous premise in coming to the conclusion hat the change which has been made was either a wise r a provident one.

The entire subject can be explained in a sentence. nsanity is a disease, and the patient should be cared or. The Legislature has enacted a law based on a otally different theory; one that would be fitting only where the member of the community had committed or was about to commit a crime, and the interests of the ublic demanded the incarceration of the individual.

The liberty of the citizen, and not the care of the iseased, has been the main thought running through he minds of the Legislature and the instigators of the egislation prompted by honest ignorance of or indiffernce on the subject.

Radical change in the law can only be justified here actual mischief is being done by the existing law, hich the practical condition of human affairs demands hall be changed to suit the true relation of members f the civic community in their daily intercourse one ith the other, and had we found from experience that he liberty of the citizen was being violated and the commitment of sane persons from bad motives resulting, no one fearful of the liberty of the American citizen, so thoroughly interwoven with our institutions of American liberty, would have hesitated in joining the demand for immediate legislative relief. No such necessity, however, existed in the case of the old insanity law; for not a single authenticated instance of the commitment of a sane person from bad motives can be recounted in the last twenty-six years, and in support of this proposition Dr. Carlos F. MacDonald, an eminent specialist, earnest student, and practical worker in this sphere of human activity, has given us unmistakable evidence.*

When we look at the men who advocated the change in the law with an earnestness and zeal which left nothing unsaid or unwritten that could have been advanced in its favor, and examine the arguments put forward by them, we find that they all labored under the erroneous impression that under the old law a citizen might be deprived of his liberty without "due process of law," his great constitutional right; but the error into which these men have fallen is apparent to the physician. Insanity is a disease, not a crime.

What jurist after reflection would maintain that a patient suffering from contagious disease, and who, because thereof, had been removed to a position of isolation and there retained, had been deprived of his liberty "without due process of law?"

It is the exercise by the sovereign power of the State of what is well known to the lawyer as its police power, and has its justification in public policy. It is unnecessary for me to do more than suggest to your minds the many instances in the various State laws which could be cited whereby individuals are cared for, restrained in their right to go where they please, because of the necessity of the protection of the health of the individual or the general public welfare. These instances of police power are still more familiar to the lawyer. The constitutional provision referred to has no application to such cases.

Under the old law the procedure to have a person committed in cases of great urgency was sufficiently cumbersome—because the relatives or those most interested in the health and welfare of the patient did not know how serious or extensive were the proceedings which had to be taken for the incarceration of their relative or friend, and even when advised of the *modus operandi* there existed the practical difficulty and delay of obtaining the blanks from the proper authorities, finding out what available physicians were qualified medical examiners, the holding of the examination, the making of the certificates, the making of the arrangements with the hospital to receive the patient, and the still more grave difficulty, the manner of transporting the patient; the law providing that the medical certificate should only be justification for the receiving the patient, but nowhere providing for the right of any one to take him actually into custody and deliver him to the hospital. Upon whom fell the duty or right of transporting the patient was unknown.

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* *State Hospitals Bulletin* for July, 1896.

All this formality and difficulty, the liability of the physicians for misconduct or negligence, and the detention of only five days, it was proved did little damage to the great community which the law was enacted to serve. This has been abundantly proved by experience. But now the proceedings have become so hampered with additional technicality and unnecessary legal form (without substantially protecting the rights of the alleged incompetent person) that much harm is bound to come to this class of patients.

The medical man knows only too well the necessity of immediate action in many cases. This, in consequence of the new law, has now become practically impossible. It is no longer a physician's treatment of a patient, but a judicial inquiry based partially upon medical evidence. The mind of the judge, of the superintendent of the receiving hospital, of a jury, or even of a referee is substituted for that of the trained medical man to finally pass upon one of the most technical questions belonging exclusively to the specially trained physician. An instance will serve to illustrate the absurdity. We are familiar with certain classes of mental disease where the symptoms show alternately periods of complete mental irresponsibility and mental responsibility; picture a patient before a jury during one of these sane periods unwilling to undergo treatment and pleading for his constitutional right of liberty. He would unquestionably be allowed to go unrestrained, with possible danger to the life of the patient as well as to those who surround him. How much better that men trained in the study of psychic pathology, who have made it their life work, should determine these most important questions!

Above all, I consider the new law most detrimental, because the so-called safeguards or technicalities and difficulties which have now been thrown around the subject will cause great delay on the part of friends and relatives to take the initiative, when promptitude, with efficient medical treatment, is vital for a favorable prognosis.

One other difficulty is the fact that a layman must set the law in motion by signing a petition. This is a legal document, the exact responsibility of signing which is to him very vague and uncertain in view of the possibility that an error of judgment may have been made, and the mere fear will oft prevent those who otherwise would act with equal effect by conversation or document, not partaking of legal nature, from taking the initiative leading to the care and treatment of the insane.

Appreciating that many of my brothers in the legal profession will disagree with me, I have no hesitancy in saying that in my judgment the present law is inadequate to meet the requirements of society, and especially inadequate so far as it attempts to care for the actual insane, and that a law drawn after free consultation between those members of the medical profession who have made insanity a lifelong study and the lawyers, and argument had for both professions, is the only safe course which can be pursued leading to satisfactory reform.

ANOTHER CASE OF POLYMASTIA.

By W. W. FULLERTON, M. D.,
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There occurred in my practice a short time ago a case of polymastia, which may be of interest statistically and show some interesting features.

Case.—Mrs. E., aged thirty-six years. She has two breasts, and in position and size they are normal; but in addition she has two accessory breasts, one on the anterior edge of and partly within each axilla. They are fairly well developed and somewhat smaller than the normal, but have no nipple.

The patient positively refused to have a photograph taken, but a very good representation is the cut seen in Keating and Coe's *Clinical Gynæcology*, page 914, showing Dr. T. Kuroiwa's case in Tokyo, Japan. In Dr. Kuroiwa's case we observe the accessory nipples, but in the case above mentioned there were no accessory ones.

There is no history of a similar occurrence in any of the relatives so far as the patient knew. She first noticed the appearance of the supernumerary breasts at puberty. There are no other indications on any other part of the body of nipples, breasts, or warts.

The breasts enlarge at the menstrual period, two or three days before which they are painful. They are also painful in pregnancy.

At about the third month of pregnancy they take on the brown pigmentation.

During lactation they enlarge and secrete milk quite actively, and, since they have no nipple, the milk, as the patient states, "apparently comes directly through the skin."

The patient furthermore states that on account of the abundance of the secretion she is obliged to wear a pad or napkin over each accessory breast. She also experiences considerable discomfort when they enlarge, from their crowding under the arm in the axillary space.

Bryant Building.

Therapeutical Notes.

Ichthyol in the Treatment of Insect Stings.—Dr. W. Ottinger, of Exbrücke (*Münchener medicinische Wochenschrift*, December 8, 1896; *Wiener medizinische Blätter*, December 17, 1896), tells of his lack of success with ammonia, but says that he has found ichthyol an admirable remedy. He has tried it in numerous cases of the stings of flies, gnats, bees, and wasps, and has found that it quickly and surely causes the phenomena of inflammation to subside. He attributes its effect to its vasoconstrictor action. It is best to apply it pure in a pretty thick layer, but it may be used in the form of an ointment.

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A LIVING MUMMY.

IN the September–October, 1896, number of the *Nouvelle iconographie de la Salpêtrière* there is a report of a clinical lecture by Professor Grasset, delivered six years ago, but now apparently published for the first time, on an "*homme momie*," that is to say, a man affected with generalized congenital sclerodermia or atrophic sclerosis of the skin, muscles, and bones. It seems that the case has been studied by Dr. Platon and described by him in the *Marseille médical*. M. Platon regards the affection as due to hereditary syphilis. The lecture is illustrated with a number of photographic views of the man, nude, and in all of them but one "his Barnum," also nude, is in the picture, too. By "his Barnum," we suppose, is meant the man who acts as his manager. This particular "Barnum" is a very sturdy-looking fellow, and the effect of this is to dwarf the little "mummy" all the more.

At the time of the lecture, the man was twenty-eight years old, but had the appearance of not being over twelve, was about four feet nine inches in stature, and weighed about fifty-three pounds. The skin of the face was stretched tight over the bones, there was an almost complete absence of muscular structure, and the general look of the face was as if it had been frozen and shriveled. The mouth was immovable, partly open, and looking, to use Charcot's expression, like a hole cut in a piece of leather. The ears were thinned and hardened and had practically no lobes. The alæ nasi were immovable. The eyelids were very thin and too narrow to cover the eyeballs, so that the man had a staring appearance and looked somewhat exophthalmic. His aspect was made still more horrible by associated entropion and a pronounced kerato-conjunctivitis. There were a few downy hairs on the cheeks and chin, but nothing that could be called a beard, but the hair of the head was normal and abundant.

The cranium was relatively large and dolichocephalic, with prominences here and there, a notable projection of one mastoid process and a true exostosis of the other, and the fontanelles seemed imperfectly ossified. The movements of the limbs were very much restricted, but, although his gait was stiff, the man could walk readily, could stoop, and could even go up stairs without a great deal of difficulty. As there is a Röntgen picture of his hand among the illustrations, it is evident that their number has been added to since the lecture was delivered.

WEST POINT FROM A MEDICAL POINT OF VIEW.

THE *Annual Report of the Board of Visitors to the United States Military Academy* for the year 1896 contains a report of the committee on hygiene and athletics, of which Dr. Joseph D. Bryant, of New York, was chairman. The report speaks of the great natural advantages of the site for surface drainage, and then suggests that a little well-considered attention to the gutters and roadway surfaces would be expressive of good taste and add much to the comfort and convenience of the place.

In both the cadets' hospital and the soldiers' hospital, it is recommended that the water-closets and urinals be removed from within the building. The proposition to convert a room on the third floor of the cadets' hospital into a suitable operating-room, involving the reconstruction of the room, with the necessary water and gas connections, on the basis of an estimate submitted by Surgeon Torney, is approved of. The grade and pavement of the courtyard in the rear of the hospital are declared to be defective, and it is recommended that these faults be corrected.

The question of the proper degree and variety of light that will best conserve the power of the cadets' eyes during study hours seems to the committee to call for prompt and judicious action. Imperfect drainage and bad ventilation are mentioned as causing dampness and noisome odors to pervade the cavalry barracks, and it is earnestly advised that the post surgeon's urgent requests for improvement of the sanitary appliances be heeded before extended outlay is made in other directions. Like faults are found in the engineer barracks.

The occurrence of a great number of cases of malarial fever among the cadets and officers during the year from June 1, 1895, to June 1, 1896, led the board to recommend to the Secretary of War a special investigation of the water supply. This recommendation was at once acceded to, and Surgeon Charles Smart was deputed to make the investigation. The recommendations contained in his report are thoroughly indorsed by the committee. Attention is called to the great need of constant caution concerning the purity of the milk and ice supplied to the post. It must be said that the committee has performed its work conscientiously, and it is to be hoped that its recommendations will speedily be carried into effect.

MINOR PARAGRAPHS.

A NEW SCOTTISH JOURNAL.

THIS month there has been issued the first number of the *Scottish Medical and Surgical Journal*, edited by Dr. William Russell and published in Edinburgh. The number contains ninety-six pages of reading matter. It is owned by a collection of promoters and supporters, and is published under the direction of a committee consisting of Professor Simpson, Professor Annandale, Dr. Joseph Bell, Dr. Clouston, Dr. John Wyllie, and Dr. Underhill, of Edinburgh; Professor McCall Anderson and Professor M'Kendrick, of Glasgow; Professor Stephenson and Professor Hamilton, of Aberdeen; and Dr. J. W. Miller, of Dundee. We presume the new journal is a monthly, but we find in it no statement as to that. The number makes a good appearance and contains much valuable matter.

A CONVENIENT TUMOR.

THE *Province médicale* cites from the *Archiv für klinische Chirurgie* the case of an opera singer who suffered from interstitial mastitis with adenoma, and was attended by Professor Czerny, who concluded that amputation of the breast was necessary. The patient was plump, and the difference in the size of the two sides of the bust would have been difficult to conceal from an audience. Fortunately, she had a fatty tumor, which was larger than the fist, situated in the lumbar region. Czerny without any hesitation removed the lipoma and transplanted it to the place of the amputated breast. Eight days afterward it was ascertained that the grafting had been successful. A year later the lipoma still retained its original size and had absolutely the fullness and appearance of the breast of the opposite side.

THE ALBANY MEDICAL ANNALS.

THIS excellent journal has entered upon its eighteenth volume under new editors, Dr. Andrew MacFarlane and Dr. J. Montgomery Mosher, and much improved in appearance. We wish it continued prosperity.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 26, 1897:

DISEASES.	Week ending Jan. 19.		Week ending Jan. 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	17	5	7	3
Scarlet fever	165	10	176	9
Cerebro-spinal meningitis	4	3	4	3
Measles	156	5	154	8
Diphtheria	284	32	295	38
Croup	9	8	7	3
Tuberculosis	188	103	159	99

The Association of Military Surgeons of the State of Ohio.—In response to a call of the surgeon general of the State, the medical officers of the Ohio National Guard met in the retiring room of the House of Representatives, in the State House, on Thursday afternoon, December 17, 1896.

A constitution and suitable by-laws were adopted, forming the Association of Military Surgeons of the State of Ohio with active members consisting of the medical officers of the Ohio National Guard, associate members consisting of ex-medical officers of the Ohio National Guard and ex-medical officers of the United States Volunteer service, and honorary members.

The following officers were elected: President, Brigadier General J. E. Lowes, surgeon general of Ohio, Dayton; vice-president, Major L. T. Guerin, surgeon of the Fourteenth Infantry, Columbus; secretary, Major H. M. W. Moore, surgeon of the First Light Artillery, Columbus; treasurer, Major Frank Bain, surgeon of the Second Infantry, Kenton; executive committee, the foregoing officers, and Major E. C. Farquhar, surgeon of the Eighth Infantry, Zanesville; Captain Gilbert I. Cullen, assistant surgeon of the First Infantry, Cincinnati; and Lieutenant (junior grade) C. W. Newton, surgeon of the First Battalion, Naval Brigade, Toledo.

Lieutenant-Colonel William E. Waters and Captain James E. Pilcher, of the army, were elected honorary members.

The New York Neurological Society.—At the next regular meeting, on Tuesday evening, February 2d, Professor William James, of Harvard University, will read a paper entitled Demoniacal Possession. Physicians in general are invited to be present.

The Richmond Academy of Medicine and Surgery.—At the last regular meeting, on Tuesday, the 25th inst., a discussion on Bacillary Meningitis was to be opened by Dr. J. A. Hodges.

The Æsculapian Society of Newark.—At a meeting, to be held on Friday evening, the 29th inst., Dr. A. M. Phelps, of New York, was to deliver an address on The Management of Clubfoot.

The St. Louis Medical Society.—At the last regular meeting, on Saturday evening, the 23d inst., the order for the evening included a paper by Dr. C. Barck entitled Some Rare Accidents and Sequelæ of Cataract Operations, and the exhibition of a complete double uterus and vagina, by Dr. A. H. Meisenbach.

The Society of Medical Jurisprudence.—A special meeting was held on Friday evening, the 29th inst., for the purpose of receiving the report of the committee appointed at the January meeting to confer with the Neurological and County Medical Societies in reference to legislation on the subject of the new law relating to the commitment of the insane.

The Albany Medical College Alumni Association of Greater New York.—The second annual banquet was held on Thursday evening, the 21st inst., at the Hotel Savoy, at which a number of prominent laymen, as well as medical men, were present.

The Medical Society of the State of New York.—As we go to press, we learn that Dr. Seneca D. Powell, of New York, is to be made president for the ensuing year.

St. Luke's Hospital.—Dr. Pearce Bailey has been appointed consulting neurologist to the hospital.

Society Meetings for the Coming Week:

MONDAY, *February 1st:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vermont, Medical Association; Providence, Rhode Island, Medical Association; Hartford, Connecticut, Medical Society; South Pittsburgh, Pennsylvania, Medical Society; Chicago Medical Society.

TUESDAY, *February 2d:* New York Neurological Society; New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Cattaraugus (quarterly), N. Y.; Hudson, N. J., County Medical Society

(Jersey City); Hampden, Massachusetts, District Medical Society (Springfield); Androscoggin, Maine, County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *February 3d:* New York Academy of Medicine (Section in Public Health); Harlem Medical Association of the City of New York; Society of Alumni of Bellevue Hospital, New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Maine, County Medical Society (Bangor); Bridgeport, Connecticut, Medical Association.

THURSDAY, *February 4th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *February 5th:* Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

SATURDAY, *February 6th:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

ALBERS—BURTON.—In New Orleans, on Wednesday, January 20th, Dr. David P. Albers and Miss Lucy Louise Burton.

ALLEN—HALL.—In Pine Bluff, Mississippi, on Friday, January 22d, Dr. Jay Allen and Mrs. Mary J. Hall.

BRINGIER—JONES.—In New Orleans, on Thursday, January 21st, Dr. Julian Trist Bringier, of Burnside, Louisiana, and Miss Mary Cuthbert Jones.

MCDOWELL — STATON. — In Pickens, Mississippi, on Thursday, January 14th, Dr. E. P. McDowell and Miss Lena Staton.

Died.

BENNETT.—In Bennington, Vermont, on Saturday, January 23d, Dr. Robert W. Bennett, aged sixty years.

BREWER.—In New York, on Wednesday, January 20th, Dr. Joseph S. Brewer, aged forty-two years.

BURRUS.—In Round Lake, N. Y., on Saturday, January 23d, Dr. David R. Burrus, in the ninety-second year of his age.

BONNETTE.—In Pollock, Louisiana, on Wednesday, January 20th, Mrs. Irene Bonnette, wife of Dr. James V. Bonnette.

HALL.—In Santa Barbara, California, on Saturday, January 23d, Dr. Richard J. Hall, aged forty-one years.

MCCULLOUGH.—In Buffalo, on Wednesday, January 20th, Mrs. J. J. McCullough, wife of Dr. John J. McCullough.

WATT.—In Johnston, Rhode Island, on Tuesday, January 19th, Louis A. Watt, infant son of Dr. Andrew Watt, of Providence, Rhode Island.

Letters to the Editor.

HE PERSISTENCE OF EXUBERANT GRANULATIONS DUE TO THE REMNANTS OF LIGATURES.

PUTNAM, CONNECTICUT, *January 20, 1897.*

o the Editor of the New York Medical Journal:

SIR: The following case may prove of interest as illustrating one of the occasional causes of obstinate "proud flesh."

F. A. W., a stalwart man of thirty-five years, was drawn into a belt at a sawmill about three months ago. The belt burned its way through all the muscular and vascular tissues of the popliteal space, and had nicely polished the bone ere he could be rescued. As a result, circulation from the articular arteries having been destroyed by a previous accident, gangrene set in on the second day following and the man was removed to the Day Kimball Hospital. The leg was freely laid open by means of several deep incisions, and thoroughly irrigated with a one-per-cent. solution of creolin. This was not done with any hope of saving the limb, as there was no pulsation whatever below the knee, but by means of drainage to reduce the temperature, which was then 103° F. Soon after, his temperature fell to 100° and Dr. Holbrook was called in consultation. As amputation was advised, Dr. Overlock and I removed the limb at the upper third of the femur, on October 3, 1896, by means of the circular-flap operation. The large arteries were tied with very large sterilized, braided silk ligatures. The drainage-tubes were removed in five days and the stump healed very well with the exception of a small polypous growth of "proud flesh." This was cauterized frequently during the ensuing month, but still persisted in breaking out again. Alum, carbolic acid, nitric acid, lunar caustic, and the thermo-cautery were applied, but nothing seemed to have any permanent effect. Six weeks from the time of operation another similar growth appeared on the opposite (internal) side of the stump, which pursued the same obstinate course as the other. Finally, on January 1st, I determined to cut off these superfluous growths. Upon my doing so, a slight quantity of pus came from one, and, seeing something white and glistening, I caught hold of it with a strong forceps and removed one of the before-mentioned silk ligatures. Upon searching the other wound, I caught hold of another similar piece of silk and removed it. Then, irrigating with 1-to-40 carbolic-acid solution, I applied a little aristol and dressed with sterilized gauze. On January 10th the stump had entirely healed. V. H. MUNSON, M. D.

THE COMMITMENT OF LUNATICS IN THE STATE OF NEW YORK.

NEW YORK, *January 25, 1897.*

To the Editor of the New York Medical Journal:

SIR: I believe we recognize a medical ethics, but according to the newspaper reports of the speech of a judge recently there is no ethics among legal gentlemen; they are only paid advocates. There is apparently a legal etiquette, however, which permits a judge to call the members of another profession "charlatans" and "mountebanks." I think he is mistaken and that there is a legal ethics which governs most of the legal profession.

The same judge declares that the law of our State allows two doctors of three years' practice to testify to a person's sanity regardless of their standing. "On the testimony of two doctors, without opposition, a man can be deliberately taken from society and consigned to a living tomb," and "two doctors are also allowed to decide if a person is addicted to the morphine habit, and have the power to commit him to an asylum."

There are several misconceptions in these statements which I will point out. No physician in this State can certify to the insanity of a patient under the law, unless he has been declared fit to discharge that responsible duty by a judge of a court of record. If the doctors certify "regardless of their standing," it is because some judge has been careless or incompetent in certifying to the physicians' qualifications as medical examiners in lunacy.

Again, no two doctors or twenty doctors can commit an insane patient to a hospital for the insane. They could not under the old law, and they can not under the new insanity law, which was passed at the instance of lawyers, and not of doctors. Under the present law a friend or relative or a public officer must go to a judge with a petition that a certain insane person be committed to an institution for the insane, accompanying his petition with a certificate of two examiners in lunacy whose qualifications to make examinations of persons suspected of lunacy have been certified to by a judge of a court of record, whose certificate is on file in Albany. This medical certificate sets forth the facts of the case as they have been ascertained by these examiners, and their opinion that he is a proper subject for custody and treatment in some institution for the insane. That is all. They have no more power to commit the patient than so many lawyers or clergymen have. It is the duty of the judge to whom the friend of the patient applies to have the patient committed, to act upon the matter, although some judges disregard this duty as expressed in the law, and after satisfying himself in any way he thinks best that the facts are as set forth in the certificate of the doctors and the oath of the petitioner, he, if he thinks best, commits the patient to an insane hospital. No doctor and no one else in this State can do it but a judge, after ascertaining every fact which he deems requisite, and it is absurd to say that two doctors can take a man from society and consign him to a "living tomb," the poetical expression for the splendid system of New York State hospitals for the insane. Such remarks, made in the heat of an after-dinner speech, would be unworthy of notice, were it not that the newspapers, and perhaps a lot of otherwise sensible people, may regard them as a splendid vindication of the rights of man. S. B. L.

EMBRYOLOGICAL SPECIMENS WANTED.

JOHNS HOPKINS UNIVERSITY, BALTIMORE, *January 20, 1897.*

To the Editor of the New York Medical Journal:

SIR: During the last ten years I have appealed to physicians from time to time to send me the human embryos which fell into their hands, and have in this way procured some very valuable specimens. These specimens have been cut into sections, and are now being modeled and studied very carefully. Yet a number of important stages are still wanting, and I therefore ask through your columns that physicians send me any material which they may obtain.

The best method of preserving human ova is to place the unopened ovum, without handling and as soon as possible, in strong alcohol. By this method the embryo within is well hardened for future microscopic study.

It is very injurious to wrap these delicate specimens in cotton before sending them by mail or express. A perfect method is to place the preserved specimen in a bottle filled completely with alcohol, thus imitating the condition of a *fœtus in utero*. If there is no air or cotton in the bottle, it is almost impossible to injure the embryo by shaking it. FRANKLIN P. MALL, M. D.,
Professor of Anatomy.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of December 2, 1896.

The President, Dr. LUCIUS W. HOTCHKISS, in the Chair.

Four Cases of Vesical Calculus removed by Litholapaxy under Local Anæsthesia.—Dr. S. ALEXANDER read a paper with this title, and presented specimens of calculi. (See page 147.)

Dr. J. W. S. GOULEY said that he had had no experience whatever with local anæsthesia in lithotrity, but that it was a commendable procedure. It was very important, it seemed to him, to take the precautions described in the paper, for otherwise, in the event of there being an abraded surface, the use of cocaine might be fraught with great danger.

The third case had especially interested him, because he had met with the same difficulties in removing fragments in cases of sacculation of the bladder. In such a case, if the diagnosis had been previously made of sacculated bladder, it did not seem worth while to attempt the operation, for it was impossible to remove all the fragments. The fourth case had been of extraordinary interest to him, not only because of the operation previously performed by Dr. Alexander, but because he had had an opportunity of examining the case recently. The whole of the prostate had been removed about three years before, and yet, on rectal examination, he had felt something which had seemed very much like the prostate. It was probable that the capsule had been filled up with scar tissue. It had had the form of the prostate, and had been extraordinarily smooth, but had lacked the gutter in the centre representing the course of the urethra. An autopsy in this case should prove very interesting, as determining whether there had been a new growth of muscle tissue, or simply the formation of scar tissue.

Dr. W. J. CHANDLER asked Dr. Alexander if he had used eucaine as a substitute for cocaine in these cases.

Dr. ALEXANDER replied that he had used it in one case of internal urethrotomy, but it had produced such intense irritation of the mucous membrane of the urethra that he had abandoned it. The pain from the application had lasted for fifteen or twenty minutes.

Old Pott's Fracture—Amputation of the Leg.—Dr. A. B. JOHNSON presented a specimen consisting of a portion of the bones of the leg and foot, taken from a man upon whom he had performed amputation of the leg four days before. Two years before, the man had fallen and injured this leg, and since then he had suffered from continued pain and disability. He had presented himself at the hospital some time ago, and a diagnosis had been made of an old Pott's fracture which had united with considerable deformity. Owing to certain peculiarities in the conformation of the foot and leg it had been decided that amputation was the best procedure. He was now glad that he had adopted this plan. The man had been suffering intensely from pain, not only when he walked, but when at rest. There had been an enormous production of new bone, growing from the tibia, and separating this bone from the fibula. The specimen showed a considerable degree of valgus, much relaxation of the internal ligament of the ankle joint, slight angular deformity and thickening of the fibula, and many, if not all, of the lesions of arthritis deformans. The cartilage of the ankle joint had undergone fibrous degeneration in places, in others it had undergone vascularization, in others it had atrophied, in still others the bone had been laid bare. The synovial membrane had also undergone atrophy and calcification. In this case Nature had evidently made a strong effort to make a new joint in a new position, and the articular surfaces, which had formerly been upon the tibia, were now upon the mass of new bone between the tibia and fibula.

Regarding the treatment, the speaker said that any operation which had aimed at division of the bone and replacement of the foot would probably have failed utterly, owing to the great irregularity of the surfaces. Again, a Syme's amputation would have left the mass of new bone, and probably would not have relieved the man's suffering. The removal of the articular surfaces of the tibia and astragalus might have been done, and the bones united in good position, but in all probability it would have been impossible to bring the lines of support through the tibia and astragalus, so that there would have been an increase of the valgus and a continuance of the pain. The man was now free from pain for the first time in two years.

The Use of Antitoxic Serum in the Treatment of Diphtheria under the Supervision of the New York City Health Department, with a Resume of the Published Reports on this Subject.—Dr. Hermann M. Biggs read a paper under the above caption, of which the following is a summary: The use of diphtheria antitoxine prepared in the laboratories of the health department began January 1, 1895. At first, however, the serum was limited in amount and unsatisfactory as to strength. Foreign antitoxine at this time was difficult to obtain and high in price, averaging from eight to twelve dollars a dose (or eighty cents for one hundred antitoxine units, Behring's standard). The price now of antitoxine furnished by the health department is, for similar preparations, seventy-five cents to a dollar and a half (or ten cents for one hundred units).

Beginning first in the department hospitals, the health board antitoxine was, as soon as a sufficient quantity was available, employed in any case of diphtheria throughout the city, being administered by inspectors without charge on the request of the attending physician. During the period ending October 1, 1896, 1,352 cases regarded as diphtheria were treated in their homes by inspectors of the department at the request of the attending physicians, and 1,207 persons (excluding inmates of public institutions) who had been exposed to diphtheria were immunized by the administration of antitoxine. More than three thousand injections of antitoxine were administered and about six thousand visits made. This duty was performed by the medical inspectors, Dr. H. F. Koester, Dr. W. E. Studdiford, Dr. J. S. Ennis, Dr. L. K. Graves, and Dr. W. J. Pulley. These cases occurred, as a rule, among the very poorest classes in the tenement-house districts, in the most unfavorable surroundings, and were severe cases, often regarded by the physicians in attendance as hopeless, nd usually came under observation late in the disease. n some of the later cases, however, not infrequently comparatively mild cases of diphtheria were referred for treatment, physicians having seen the effects of antitoxine on the course of the disease. Up to April 1st bout eight per cent. of the cases treated were found moribund when first seen by the inspectors, while in the last six months the percentage was one half of this. Practically no other treatment was employed besides the administration of antitoxine; in some few cases strychnine, whisky, etc., were also given. In many instances the attending physician discontinued his visits after referring the case to the health department, as the family were unable to pay for his visits.

There has been from the first a continuous and marked improvement in the results obtained, owing, it is believed, to the increased experience in the use of this agent, the earlier application of the remedy, the better preparation of the serum, and the larger dosage employed. While in the first year the mortality from diphtheria was 17.9 per cent., during the last six months it was only 11.1 per cent.

For the carrying out of the plan adopted the city was divided into districts under charge of inspectors, who are always on duty and liable to be called upon at all times during the day or night. The requests for the administration of antitoxine are received at the offices of the health department, and immediately referred by police telegram or by telephone to the inspector in charge of the district in which the case occurs. In some instances recently, when several cases have been treated for the same physician, they have been referred directly to the inspector to save time.

Up to October 1st in all 1,352 cases regarded as diphtheria have been treated. Of these, 100 cases showed no Loeffler bacilli on bacteriological examination, were considered as false diphtheria, and excluded from the statistics; or were found to be true diphtheria later and were transferred to the Willard Parker Hospital; or the treatment was discontinued from some other cause. There remain 1,252 cases, of which 1,054 recovered and 198 died, the mortality being 15.8 per cent. Of the whole number, 856 were treated previous to April 1, 1896, and among these the mortality was 17.9 per cent.; 396 were treated from April 1st to October 1st, and among these the mortality was 11.1 per cent. While the difference in mortality may in part be due to the season of the year, yet it does not satisfactorily account for the whole difference.

Of the 1,252 patients 80 were moribund at the time of the first injection, or died within twenty-four hours after this. These may properly be excluded in a consideration of the utility of antitoxine in the treatment of diphtheria. There remain 1,172 cases with 118 deaths, or a mortality of ten per cent. Five hundred and seventy-four, or nearly half of the whole number, were reported by the inspectors to be in a bad condition and suffering from very severe or septic diphtheria at the time of the first injection; 268, or about twenty-one per cent., were reported as in good condition, or apparently affected with a mild form of the disease when first seen. In 355, or more than twenty-eight per cent. of the whole number, the larynx, with or without the pharynx, tonsils, and nares, was involved. In 242 cases, in addition to the pharynx and tonsils, the nares were involved. One hundred and eight deaths occurred among the 355 laryngeal cases, giving a mortality of 30.4 per cent. Seventy-two of the laryngeal cases were intubated, and of these 29 died, or 40.2 per cent. In 283 laryngeal cases there was no operative interference, and in these the mortality was 27.9 per cent. Of the fatal laryngeal cases, in 38 the patients were moribund at the time of the first injection or died within twenty-four hours after it. If these are excluded, there remain 317 cases with 70 deaths, or a mortality of twenty-two per cent.

In the majority of the cases (793) only one injection of antitoxine was administered; in 352 two injections were made, and in 108 three or more. In all severe cases the initial dose was large, from 1,500 to 3,000 units, experience showing that the best results were obtained from large initial doses, and the tendency has been constantly to increase the size of this dose. As a rule, the patients were seen the second time at the end of twenty-four hours, and where it was considered necessary a second injection was then administered. They were afterward seen at intervals until the disease had terminated either in complete convalescence or death.

The serum employed has been generally of high grade, and during the last nine months has been at least twice as strong as Behring's No. 3—that is, it contained 300 to 500 antitoxine units in each cubic centimetre. Better results have been obtained with the high-grade preparations and with larger doses. There has also been a considerable diminution in the frequency and severity with which rashes have occurred since the use of the high-grade preparations of antitoxine in which smaller doses of serum are employed. Joint pains were of very unusual occurrence. In some of the early cases where large immunizing doses were given, severe joint symptoms, accompanied by prostration, occurred, and in a number temporary albuminuria. No case has come under observation where death could be ascribed to the administration of the serum, or where any permanent injury has been produced by it.

In all of the cases, with rare exceptions, in which the clinical features were unmistakable, the clinical diagnosis was confirmed by bacteriological examination. In a few cases the result of the bacteriological examination was indecisive, while the case was evidently diphtheria, and these have been included. In others bacteriological examination showed clearly that the case was false diphtheria, and these have been excluded. The usual practice has been, when the case was seen for the first time by the inspector, to administer an injection of antitoxine if it seemed clinically to be a case of diphtheria, and at the same time to make a culture from the throat for bacteriological examination. The course subquently depended upon the result of the bacteriological examination.

Immunizing injections, varying from 50 to 500 units, were administered to 1,207 persons in families where there were children exposed to the disease; in five children laryngeal diphtheria developed within twenty-four hours after the injection, and in seven others pharyngeal diphtheria appeared. All of these recovered on receiving further curative injections. In nine children diphtheria developed within thirty days after the immunization. All of these cases but two were mild, and the patients recovered; in one scarlet fever appeared on the second day and the patient died, in another severe diphtheria appeared on the fifth day, and the patient recovered after antitoxine was administered. From the data at command it would seem that the protective influence of the immunizing injections can not be depended upon to last longer than about four weeks, although in many cases the period is apparently longer. With the high-grade preparations of antitoxine now employed the amount of serum required for an immunizing injection is very small, from three to ten or fifteen minims, according to the age of the patient and the strength of the preparation, and since these small doses have been employed it has been unusual to see any disturbances (which sometimes ensued on the injection of large quantities of antitoxine) following the administration of an immunizing injection. Among the patients treated with injections in an infant asylum were an infant three weeks old, born at full term, injected with one hundred and fifty units, and weighing at the time of injection only four pounds three ounces, and another infant, premature, nineteen days old, born at the seventh month, still in the incubator, injected with one hundred and fifty units, weighing only three pounds eight ounces. These infants had no reaction and no rash. Several pregnant women, in the eighth and ninth months, were also injected without harm.

From October 1, 1895, arrangements were made to furnish free antitoxine to physicians for use among the poor, on condition that reports of the cases thus treated should be sent in to the health department. This free antitoxine could be obtained from the druggists acting as agents upon the statement of the physician that the patient was too poor to pay for it. Blanks were also furnished, upon which a history of the cases could be filled out by the attending physician. This arrangement has not been very generally known, and only recently has been much utilized by physicians, so that the complete report has not yet been obtained. Up to October 1, 1896, 409 such cases have been reported, of which 34 proved on bacteriological examination to be false diphtheria, were transferred to Willard Parker Hospital, or had histories too incomplete for proper tabulation, and are therefore excluded; in the remaining 375, 307 patients recovered and 68 died, a mortality of 18.1 per cent.

The following *résumé* of the statistics and reports on the antitoxine treatment of diphtheria has been collected from the reports published in the various medical journals of the Continent of Europe, Great Britain, and the United States, beginning with the first extensive application of the new remedy in the early part of 1894 and bringing the subject up to October 1, 1896. In compiling these statistics, though the field has been carefully gone over, the collective investigations of Heubner, Monti, Eulenburg, the Kaiserliches Gesundheitsamt, and others, and particularly Welch's admirable review of the subject, have been made use of.

The first report of experiments made with the blood serum of immunized animals was communicated by Behring and Wernicke to the Seventh International Congress of Hygiene and Demography, in London, August, 1891. The earliest report of cases treated with antitoxine was in 1893, 30 cases treated by Behring in the Institute for Infectious Diseases in Berlin. In April, 1894, 233 cases of diphtheria, treated in the Berlin hospitals, with a mortality of twenty-three per cent., were reported by Ehrlich, Kossel, and Wassermann. About the same time Baginsky and Katz reported 163 cases, with a mortality of 12.9 per cent., treated in the Kaiser und Kaiserin Friedrich Kinderkrankenhaus in Berlin. But it remained for Roux to arouse the interest of the world in the discovery which Behring had announced three years before. Roux's masterly address, delivered at the eighth International Congress of Hygiene and Demography at Buda-Pesth, September, 1894, in which he reported three hundred cases of diphtheria treated with antitoxine in the Hôpital des enfants malades in Paris, really directed the attention of the whole medical profession to this subject, which has since become one of the most interesting in the history of medicine, and with this may be said to have begun the first extensive application of the new treatment of diphtheria.

In calling attention to the ways in which the value of the antitoxine treatment of diphtheria has been tested—viz., by statistics and by clinical study of the course of the disease—the various questions were discussed which might vitiate statistics of the kind, and it was shown how such fallacies might be avoided by comparing the mortality of a large series of cases treated by antitoxine with a similar series treated previously or simultaneously in other ways in widely separated places and over an extended period of time. Regarding the value of the evidence as to the efficacy of the remedy based on the clinical study, this, of course, depended on the confidence we placed in the opinions formed by the individual observers; but when the opinions expressed by many of the best clinical observers in all parts of the world were almost unanimously in favor of antitoxine, it would seem that there were no longer any reasonable grounds for refusing to accept the vote of the vast majority.

[A series of statistical tables was then presented illustrating the results of the antitoxine treatment up to the present time. The statistics contained all the larger series of cases which have been reported up to October 1st. No isolated cases were taken, only series of cases of ten and over. There had been no selection of cases and no reduplication so far as known, certainly none that could be avoided.

Table I showed the mortality of cases of diphtheria treated with antitoxine, and the previous or simultaneous percentage of mortality without antitoxine contained in 158 reports of cases in hospital and private practice. These cases included not only those of patients to whom in the early use of antitoxine were given insufficient doses, but also of those who were moribund at the time or died within twenty-four hours after the first njection.]

In 109 reports from hospitals there were 15,560 ases with 3,009 deaths, or a mortality of nineteen per ent., with the antitoxine treatment; in 49 reports from rivate practice there were 9,208 cases with 995 deaths, r a mortality of 10.1 per cent.; or, in a total of 24,768 ases there were 4,004 deaths, a mortality of sixteen er cent., as against a previous or simultaneous morality of thirty to forty per cent. (taking the lowest igures in the reports) without antitoxine. It would ppear, therefore, according to these reports, that there as been a reduction of mortality in diphtheria in both ospital and private practice of at least fifty per cent., s the result of the antitoxine treatment. The lower ercentage of mortality in private practice is probably ue to the fact that these cases usually come under reatment in an earlier stage of the disease, and are enerally more favorable cases.

[Table II gave the mortality of cases of diphtheria eated *with* and *without* antitoxine (taking the reports hich showed these data) at the same time, and in the periods immediately before and after the serum treatent.]

From 45 reports in which these cases were recorded, ere were 11,147 cases treated with antitoxine, resultg in 2,166 deaths, or a mortality of nineteen per cent.; hile at the same time, or immediately before or after, ere were treated 13,294 cases *without* antitoxine with 026 deaths, or a mortality of 37.8 per cent. Of these, 986 cases were treated in hospitals *with* antitoxe, with a mortality of twenty-one per cent., and 9,039 cases treated *without* antitoxine, with a mortality of 36.4 per cent. Three thousand one hundred and sixty-one cases were treated in private practice *with* antitoxine, giving a mortality of thirteen per cent., and 4,255 cases treated *without* antitoxine, with a mortality of forty per cent.

Thus put to the severest test, selecting the worst cases, as was often done for purposes of control and to prove the merits of the new remedy (though occasionally it was an unfortunate necessity, owing to lack of antitoxine, which compelled a forced interruption of the antioxine treatment), there is still a difference of fifty per cent. in favor of the antitoxine treatment.

Table III gives the mortality of diphtheria in the Berlin and Paris hospitals for 1893, 1894, 1895, and the first half of 1896.

TABLE III.

	BERLIN HOSPITALS.			PARIS HOSPITALS.		
	Cases.	Deaths.	Per cent.	Cases.	Deaths.	Per cent.
1893	2,570	1,132	44·0	1,882	968	51·4
1894	2,890	801	27·6	2,355	837	35·5
1895	3,144	493	15·7	2,664	363	13·6
1896	1,100	151	13·6	1,298	199	15·3 1st half year.

From a comparison of the figures in the above table it appears that since the introduction of antitoxine into the hospitals of Berlin and Paris, according to the official reports, the mortality from diphtheria and croup has been reduced more than one half.

It has been maintained by some that in calculating the mortality from diphtheria, not the percentage mortality, but the absolute mortality is the only fair criterion of the value of antitoxine.

Table IV showed the actual number of deaths from diphtheria and croup in Berlin, Paris, and New York since 1888, including the first half of 1896.

TABLE IV.

	City of Berlin.	City of Paris.	City of New York.
1889	1,284	1,890	2,291
1890	1,586	1,859	1,783
1891	1,078	1,531	1,970
1892	1,405	1,557	2,106
1893	1,643	1,266	2,558
1894	1,430	1,009	2,870
1895	996	440	1,976
1896	294 (first half year)	329 (first half year)	1,392 (first three quarters of a year)

From this table it would appear that in the cities of Berlin, Paris, and New York since antitoxine came into more general use the absolute mortality has been conspicuously reduced. In New York the absolute mortality figures do not show quite so well as in the cities of Berlin and Paris, as the antitoxine has not been as generally used in this city. But the percentage mortality shows a marked diminution in the death-rate. In 1894 there were in New York 9,641 cases of diphtheria and croup reported, with a mortality of 29.7 per cent.; in 1895 there were 10,353 cases, with a mortality of 19.1 per cent., and in 1896 (first nine months) there were 8,286 cases, with a mortality of 16.8 per cent.

H. Kossel shows also some striking statistics of a like character in refutation of the criticism made by Gottstein and others, that in order to prove that the reduction of mortality attributed to antitoxine has actually taken place it must be shown that there has been an *absolute* reduction of mortality at the same time that the number of cases of diphtheria has increased.

Table V shows the cases and absolute death-rate from diphtheria in the Berlin hospitals and in the city of Berlin.

Table V.

	BERLIN HOSPITALS.		BERLIN CITY.	
	Cases.	Deaths.	Cases.	Deaths.
1889	1,623	573	4,220	1,210
1890	1,792	695	4,586	1,601
1891	1,764	623	3,504	1,342
1892	2,074	837	3,683	1,637
1893	2,450	951	4,315	1,416
1894	2,890	801	5,220	1,321
1895	3,061	484	6,106	987

Taking the absolute death-rate from diphtheria and deaths to 100,000 in all the German cities of over 15,000 population, he gives the following:

Table VI.

	Absolute deaths.	Deaths to 100,000.	
1889	11,919	108	The average from 1886 to 1894 was 106.
1890	11,915	105	
1891	10,484	84	
1892	12,365	97	
1893	16,557	130	
1894	13,790	101	
1895	7,611	53	

These figures taken together would seem to prove conclusively that the absolute mortality from diphtheria has been reduced at the same time that the number of cases have increased; and they prove, moreover, that the epidemic of diphtheria, in Germany at least, instead of being on the decrease has been steadily on the increase for the last six or eight years up to 1894 and 1895, when there was a sudden and marked decline in the death-rate, corresponding to the use of antitoxine. That would indeed have been a strange coincidence of natural causes which reduced the mortality of diphtheria for the benefit of antitoxine, instead of the reduction of mortality being due to the effects of the antitoxine.

One of the most significant effects of the antitoxine treatment is shown in the remarkable results which have been obtained in cases of laryngeal diphtheria with stenosis.

[Table VII gives the mortality of operative and non-operative cases of diphtheria treated with antitoxine.] In a total of 15,148 cases treated, taken from 72 reports, there were 2,626 deaths, or a mortality of 16.6 per cent.; of these, in 12,066 the patients were not operated on (eighty per cent.), and 1,491 died, giving a mortality of 13.5 per cent.; 3,082 were operated on, by intubation or tracheotomy (twenty per cent.), and 1,135 died, or 36.7 per cent. Previous to the antitoxine treatment forty per cent. of all cases were reported as having required operative interference. In the 3,082 operative cases 1,355 patients were tracheotomized, with 569 deaths, or a mortality of forty-two per cent.; 1,173 were intubated, with 361 deaths, or a mortality of 30.8 per cent.; 52 were intubated and required secondary tracheotomy, and 37 died, or seventy-one per cent.; 502 required tracheotomy or intubation (not stated which), with 168 deaths, a mortality of 33.2 per cent. According to Monti and Hirsch, the mortality in tracheotomy previously was 68.5 to 73.3 per cent. The best report of results of intubation in this country has been a mortality of forty-two per cent.; 1,173 were inobtained in operative cases, according to these present reports, was seventy per cent. But, taking the lowest results recorded at all, 68.5 per cent. for tracheotomies and 51.6 per cent, for intubations, we see here, too, that there has been an apparent reduction of mortality for operative cases of about fifty per cent., while at the same time the number of cases requiring operative interference has been reduced one half, as the result of serotherapy.

(To be concluded.)

Book Notices.

Human Anatomy, General and Descriptive. For the Use of Students. By John Cleland, M. D., LL. D., D. Sc., F. R. S., Professor of Anatomy in the University of Glasgow, and John Yule Mackay, M. D., C. M., Professor of Anatomy in University College, Dundee, Late Senior Demonstrator in the University of Glasgow. With Six Hundred and Thirty Illustrations, of which Two Hundred and Fifty-seven by the Authors are now printed for the first time. New York: The Macmillan Co., 1896. Pp. xx–833. [Price, $6.50.]

Students of human anatomy must of late years have been somewhat appalled at the enormous increase in the bulk of the material offered to them in the current textbooks. Gray becomes larger with each successive edition, Quain has now reached three thick royal octavo volumes; in French, Testut has three, and Poirier at least four; and in German the latest announcement is that of Bardeleben, who has the editorial supervision of a comprehensive work which will cover eight closely printed volumes. As the years of man's life are limited and anatomy is only one of a large number of studies crowded into a medical course, it is no wonder that there is found necessary a sifting process by which the judicious teacher may separate what a student must necessarily learn from what he may without injury to his effectiveness as a practitioner leave to future leisure moments if any such ever occur.

The authors have kept this in mind in the production of the excellent book before us. It is a marvel of condensation, containing, dressed in attractive literary form, the principal facts relating to both the gross and the microscopic anatomy of the body, as well as a summary of its embryological development. In this respect the book is a pronounced success, but in order to attain this end the authors have necessarily been obliged to avoid discussions of doubtful points and to omit bibliographical references almost altogether. The work is, in fact, rather a compend than an exhaustive treatise, but a compend of such excellence and originality that it is likely to afford more assistance than some much more pretentious volumes.

As is usually the case with the publications of this house, the book is beautifully printed and provided with an elaborate and accurate index. The illustrations are not, however, such as might be expected in a work of this rank, although many are excellent selections from Testut, Pansch, Kölliker, and other authors who still adhere to woodcuts and the more artistic methods of representation. In the originals the "process" fiend has done his worst. Under osteology, half-tones from photographs are used, and there is consequently great loss of distinct detail in a subject where it is most urgently required. A considerable number of figures are reproductions of crude drawings on "process" paper. It is a curious instance of the foibles of the human mind that so many scientific men should imagine that they are furthering the cause of accurate scientific teaching by attempting to illustrate their own works, although possessing neither artistic aptitude nor any training in drawing, an art which requires long and patient labor in order to attain the necessary skill. Dr. Cleland has evidently spent much time in polishing his literary style until he has attained the ability to please his readers by the grace and aptitude of his clean-cut sentences; why, then, should he not see that he is injuring his work by appending to it the rude attempts of a mere apprentice in drawing?

In the matter of nomenclature the authors have been conservative. The names proposed by the German Anatomische Gesellschaft have not been adopted in all cases, for the reason, as stated, that "the adoption of its recommendations in this country would, in a large number of instances, involve the abandonment of good names in general use for others whose advantages are not obvious." No reform in nomenclature is possible without some temporary sacrifices, and it is to be regretted that in this, the first comprehensive work that has appeared in England since the publication of the revised list of terms proposed by the Gesellschaft, the authors have not seen their way to a more complete acceptance of its scheme. It will be remembered that England was properly represented in the committee which prepared the list. The advantage expected to accrue from the adoption of a uniform nomenclature by all nations does not relate to the aptitude of single terms, but to the simplification of anatomical literature by the abandonment of the thousands of synonyms now cumbering our books.

For the adjectives *superior* and *inferior*, as used in human anatomy to indicate relative position toward the cephalic or caudal extremity of the body, *proserial* and *retroserial* are proposed. It is difficult to agree with our authors when they say that these are "self-explaining terms completely fitted to supply the want." They seem adapted only for use in connection with organs or parts arranged in series, and inappropriate when applied to surfaces or extremities. In a few cases new terms are used, such as *costo-vertebral foramen*, for the *foramen transversarium* in the transverse process of a cervical vertebra; the *indirect cerebellar tract* of the spinal cord for the *fasciculus anterolateralis superficialis*, or tract of Gowers; the *occipital probole* for the convex squamous portion of the occipital bone. These are all good terms and deserve acceptance. Sometimes there appears to be a wavering between the old and the new nomenclature, for we see on the same page (99) the terms *thyroid* body and ductus *thyreo*glossus.

In a few instances the authors have advanced views which are certainly not in accord with those usually accepted by modern anatomists. On pages 654 and 655 the following language is used in speaking of the eye: "The space between the cornea and the iris is named the *anterior chamber*. It owes its name to its having been formerly supposed that the iris hung free, with aqueous humor not only in front but also behind it, in a space which was distinguished as the *posterior chamber;* but such an arrangement only occurs as an unusual abnormality detectable by [the] quivering of the iris from want of support. The pigmented epithelium on the posterior surface of the iris rests peripherally on the free tips of the ciliary processes which fit into the plications of the zonule of Zinn, while in its remaining extent it presses on the front of the capsule of the lens."

This view of the position of the iris is a very old one, but no longer tenable. Early in the last century Petit showed the French Academy that when eyes were frozen immediately after death a continuous ring of ice was formed between the posterior surface of the iris and the lens. In the living subject any sudden jar of the head sufficient to cause the aqueous humor to oscillate occasions vibratory movements of the upper part of the iris, which would not occur if it were solidly supported behind upon the ciliary body and the lens. The common experience of ophthalmologists is that a needle can always be easily introduced between the peripheral border of the iris and the lens, that adhesions are almost invariably at its pupillary border, and that when the aqueous humor is partially evacuated by means of an incision in the cornea the iris bulges toward the opening in such a way as to show that it is pressed forward by the aqueous humor behind it.

Again, in speaking of the membranes of the brain, they say: "The fourth ventricle can not be opened by the separation of the medulla oblongata from the cerebellum without injury to the pia mater. It is a mesial tear made in this way below the extremity of the choroid plexus which is described by Luschka under the name of *foramen of Magendie* and is figured by the most recent writers and supposed by them to be natural. It can easily be demonstrated to be artificial if the dissector be on his guard."

The existence of the foramen of Magendie was for a long time a vexed question, and was finally set at rest by the exhaustive and conclusive researches of Key and Retzius, Marc Sée, and Hess. The latter examined for the purpose no fewer than forty-seven brains, ten of which were of newborn children and seven of fœtuses. These brains were many of them hardened *in situ*, and were dissected with the utmost care. The foramen was present even in fœtuses but fifteen centimetres long. Sée experimented by leaving the brain and spinal cord *in situ*, removing the vault of the skull, and uncovering the third ventricle. Injections of a liquid colored with Prussian blue into the subarachnoid space of the cord in the lumbar region appeared in the ventricle. The present writer has himself often demonstrated the foramen. While it is variable in its character, no one who has cut down upon this region with all the precautions known in modern manipulations and found it with a perfectly definite and often rounded outline, usually *with a loop of the chorioid plexus passing over its edge*, can believe it to be an artificial tear.

For a first edition, the work is very free from typographical errors. There are, however, a few which should be corrected in another edition, for everybody knows how tenaciously an error in the printing of anatomical terms clings to literature, witness *Casserian* ganglion for *Gasserian*, a purely fictitious designation which, nevertheless, was always used by Huxley in good faith, because it occurred in the book which he had studied when at school. We note "Löven" for *Lovén*, "Guèrin" for *Guérin*, "Schweiger-Seidel" for *Schweigger-Seidel*, and "Rivini" for *Rivinus* (Augustus Quirinus Rivinus, whose vernacular name was *Bachmann*). In the note on page 249 Kerckring's *Spicilegium anatomicum* is stated to have been published in 1870, instead of 1670.

All these are but trifles and should not prevent our congratulating the authors upon the production of a scholarly and helpful book.

A concluding chapter gives an interesting and timely account of the application of the Röntgen rays to the study of the articulations.

Practical Diagnosis. The Use of Symptoms in the Diagnosis of Disease. By Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics in Jefferson Medical College of Philadelphia, etc. Illustrated with One Hundred and Ninety-one Engravings and Thirteen Colored Plates. Philadelphia and New York: Lea Brothers & Co., 1896. Pp. viii–17 to 573. [Price, $4.75.]

In this volume the author adds another to the many attempts that have been made to simplify what is perhaps the most difficult group of problems presented to the physician—namely, the diagnosis of the diseases which make up what constitutes the field of so-called internal medicine. He approaches his task in a way which, while not altogether new, is yet unusual. His book is devoted to the discussion of the various signs and symptoms that are met with in disease, and a description of all the circumstances under which each symptom may occur. The entire work is written from the standpoint of symptoms, instead of from the standpoint of diseases.

In the preface he explains his object and defends his method, realizing apparently the objections that may be raised to it.

The question may be fairly asked, whether the method adopted in the present book is a wise one. We believe that it is wise, if the work is regarded as purely a book of reference, as a cyclopædia of symptoms. As part of the curriculum of the beginner and as entering into the development of the broader scientific spirit, the method seems to us inferior to that employed in the older manuals, where the text is arranged according to diseases, and where a more rounded picture is presented to the mind, and breadth of view is encouraged. The present method leads rather to the study of symptoms than to the study of diseases, and does not engender a philosophical viewing of the problems of medicine.

For the manner in which the author has performed the task he has set for himself he deserves much praise. The work contains a vast amount of useful information, and is in most parts remarkably complete and accurate. Indeed, at times the author's analysis of symptoms is unnecessarily refined, as on page 39, where, speaking of bilateral ptosis, he says: "It is also seen in feeble overworked women, particularly in the early morning on awakening."

The tables and diagrams scattered throughout the book, collected from a large variety of sources, will be of much use.

The most valuable sections are those devoted to the external visible characteristics of the body and to the symptoms of diseases of the nervous system. The least satisfactory are those describing the symptoms of diseases of the abdominal and thoracic viscera. This, however, is to be expected, as these last phenomena lend themselves less readily to the arrangement adopted by the author.

Yet in these sections, too, there will be found many points insisted upon which are unfortunately omitted from most similar treatises—as, for instance, in the chapter on The Physical Signs of the Thoracic Viscera, where the advice is given to examine always high up in the axillæ and in the region of the interlobar sæpta, in looking for the evidences of pneumonia or phthisis.

The indices are especially complete, one of diseases, another of symptoms, and these add much to the usefulness of the work. On the whole the good points of the book are too many to admit of individual mention, and its faults are singularly few.

A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods. For Students, Hospital Physicians, and Practitioners. By Charles E. Simon, M. D., Late Assistant Resident Physician, Johns Hopkins Hospital, Baltimore. With One Hundred and Thirty-two Illustrations on Wood, and Ten Colored Plates. Philadelphia and New York: Lea Brothers & Co., 1896. Pp. xix–17 to 504. [Price, $3.50.]

This book is a good one. It differs from most of the works on clinical diagnosis in confining its scope strictly to laboratory investigation, and in this field it is complete and satisfactory. The author states that it has been his aim to present to students and physicians those facts in clinical chemistry and microscopy which are of practical importance, and he has not confined himself to the bare statements of facts, which must in themselves be dry and uninteresting; he has also attempted to point out the reasons which lead up to the conclusions reached.

Chemical and microscopical methods are described in detail, so that the student and practitioner who have not had special training in such manipulations will be able to obtain satisfactory results.

The subject matter covers the examination of the blood, the secretions of the mouth, the gastric juice, the fæces, the nasal secretion, the sputum, the urine, transudates, exudates, cystic contents, vaginal discharges, and the milk. In every case a description of normal material precedes the pathological considerations, which latter, in turn, are followed by an account of the methods used in examination.

Turning to the various subjects enumerated above, we find that they are treated clearly and in an interesting manner, and that they are illustrated with many cuts and colored plates, all of an excellent character. Sixty-seven pages are given to the examination of the blood, sixty-three pages to the examination of the gastric juice, and two hundred and twenty-one to the examination of the urine, while all other subjects receive their due share of space.

The paper, type, and illustrations of the book are admirable.

Essentials of Physical Diagnosis of the Thorax. By Arthur M. Corwin, A. M., M. D., Demonstrator of Physical Diagnosis in Rush Medical College, etc. Second Edition, revised and enlarged. Philadelphia: W. B. Saunders, 1896. Pp. 17 to 199. [Price $1.25.]

This little book was originally published by the author for the use of his students, and for this purpose i is, no doubt, useful. For general circulation it would seem to be superfluous, as there are already many books of a similar character upon the market.

Practical Notes on Urinary Analysis. By **William B. Canfield**, A. M., M. D., Lecturer on Clinical Medicine, University of Maryland, etc. Second Revised Edition. Detroit: George S. Davis, 1896. Pp. 7 to 106.

This very short treatise is meant to be a guide for the busy practitioner, but in many instances it is not so comprehensive as it should be, even for this purpose. Heller's nitric-acid test for albumin, a very common one, is barely described. We find "a well-defined ring-shaped cloudiness may also be caused by urea and uric acid (in which case it is higher up)." Nothing is said about the effect of gentle heat on this ring. The fact that the cloudy ring of albumin may be colored is not mentioned, and no precautions in the test are alluded to. The copper tests for sugar, including Fehling's, which is very commonly used, are briefly and unsatisfactorily considered. The one method given for ascertaining the quantity of urea is by Lyon's ureometer. That of Doremus, using the same reagent, is simpler.

A clearer and more comprehensive consideration of the commoner tests in urinary analysis would have added but few pages to the book. It does not, of course, meet the demands of students.

Diagnostic Uranalysis. By **M. D. Hoge, Jr.**, M. D., Professor of Histology, Pathology, and Urinology, University College of Medicine, Richmond, Va. Richmond: George M. West, 1896. Pp. 7 to 87. [Price, $1.]

This book considers the histology of the urinary organs, the symptomatology of kidney disease, urinary analysis, and the relation of various conditions of the urine to disease, with reference in some cases to treatment. Fehling's test is stated to give a play of colors varying through green, yellow, orange, and red. Nothing is said of a precipitate. On page 37 we find "urinometer" for *ureometer*. The book is really only a succession of well-classified tables, and as such is valuable to a student, especially if he has an examination before him.

Preventive Medicine. A Brochure for the Laity. Being a Practical Treatise on the Theory and the Technique of the Prevention of Disease. By Dr. **Clarence Rutherford Hendrickson**, County Physician of Canadian County, Oklahoma. Wichita, Kansas: Press of the *Wichita Eagle*, 1896. Pp. 9 to 75.

"An ounce of prevention is worth a pound of cure" s the motto of this "brochure for the laity." As such, iz., a book for the lay reader alone, it may have its lace in the household library. A great deal of sound ommon sense, expressed in very unscientific and homely nguage, is found in its pages. Inaccuracies occur frequently. More prominence might have been given to ygiene, food, clothing, etc., and less to what should roperly belong to the physician's province, such as the eding of sick infants, weaning, sterilization of milk, nd the care of women during pregnancy. Tables of e composition of foods are out of place in a book that intended to be practical. With all its shortcomings, e must admit that there is a good deal in it of what e author calls "common horse sense."

BOOKS, ETC., RECEIVED.

Abdominal Surgery. By J. Greig Smith, M. A., F. R. S. E., Professor of Surgery, University College, Bristol, etc. Fifth Edition. London: J. & A. Churchill, 1896. In Two Volumes. Vol. I. Pp. xiii–3 to 576. Vol. II. Pp. x–579 to 1171. [Price, $5 each volume.]

Autoscopy of the Larynx and the Trachea. (Direct examination without mirror.) By Alfred Kirstein, M. D., of Berlin. Authorized Translation (altered, enlarged, and revised by the author) by Max Thorner, A. M., M. D., Professor of Clinical Laryngology and Otology, Cincinnati College of Medicine and Surgery, etc. With Twelve Illustrations. Philadelphia: The F. A. Davis Co., 1897. Pp. x–68. [Price, 75 cents.]

Artificial Anæsthesia. A Manual of Anæsthetic Agents and their Employment in the Treatment of Disease. By Laurence Turnbull, M. D., Ph. G., Aural Surgeon to the Jefferson Medical College Hospital, Philadelphia, etc. Fourth Edition, revised and enlarged. With Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. xxiv–25 to 550. [Price, $2.50.]

Report of the Commissioner of Education for the Year 1894 to 1895. Volume 2. Containing Parts II and III.

Transactions of the American Surgical Association. Volume the Fourteenth.

Transactions of the American Orthopædic Association. Tenth Session, held in Buffalo, on May 19, 20, and 21, 1896. Volume IX.

Transactions of the American Dermatological Association. Twentieth Annual Meeting, held at the Hot Springs of Virginia, September 8, 9, and 10, 1896.

Twelfth Annual Report of the New York Post-graduate Hospital. For the Year ending October 1, 1896.

Sixth Annual Report of the State Board of Medical Examiners of New Jersey. 1896.

Twentieth Annual Report of the Board of Managers of St. Christopher's Hospital for Children. For the Period ending September 30, 1896.

Report of the State Health Officer of the State of Texas. For the Years 1895 and 1896.

Première session de l'Association française d'urologie. Paris, 1896.

Compulsory Vaccination; should it be Enforced by Law? By Clark Bell, Esq., LL. D. [Reprinted from the *Medico-legal Journal.*]

The Value of Pulmonic Second Sound. By J. N. Hall, M. D., of Denver. [Reprinted from the *Journal of the American Medical Association.*]

A Study of Cicatrices, with Reference to Right- and Left-handedness and Ambidexterity. By J. N. Hall, M. D. [Reprinted from the *Boston Medical and Surgical Journal.*]

A Report of Three Cases of Phthisis Pulmonalis following Scald of the Chest. By J. N. Hall, M. D. [Reprinted from the *Medical Record.*]

Tubo-ovarian Cysts, with Interesting Cases. By Albert Goldspohn, M. D., of Chicago. [Reprinted from the *American Journal of Obstetrics.*]

Errors and Modern Methods in Minor Gynæcology. By Albert Goldspohn, M. D. [Reprinted from the *North American Practitioner.*]

The Treatment of Cervical Adenitis. By F. M. Briggs, M. D., Boston. [Reprinted from the *Boston Medical and Surgical Journal.*]

Professional Fees. By Safford G. Perry, D. D. S. [Reprinted from the *Dental Cosmos.*]

The Drainage of Wounds. By Major Charles Adams, M. D., Chicago. [Reprinted from the *Medical Standard.*]

Miscellany.

The Treatment of Chilblains.—M. George Thibierge contributes a long article on this subject to the *Journal des praticiens* for January 9th, of which the following is the substance:

Chilblains, he says, are always painful in a more or less marked degree; their development is preceded by pruritus and a sensation of heat and of pricking; after they have become established they are also accompanied by the same sensations, which are tolerable when the diseased parts are exposed to cold and extremely painful when subjected to heat; changes from cold to heat and, frequently, rest in bed arouse and increase their intensity; this symptom is of great diagnostic value. Even simple pressure is extremely painful, however slight the intensity of the lesions. To this may be added tumefactions and ulcerations, thus rendering chilblains veritable infirmities.

Chilblains may be followed by a general tumefaction of the regions attacked, which is the result of local asphyxia even more than of the chilblains themselves; in the hands this tumefaction gives an entirely peculiar sausagelike aspect to the fingers, somewhat like that resulting from acromegaly.

Another consequence, still more rare, of chilblains is the production of localized and persistent vascular dilatations, true acquired capillary angeiomata, on which there are small papillomata resembling warts.

The erythematous congestion of the hands, or rather of the extremities, which in certain subjects appears when cold weather sets in, and is one of the forms of what is known as Raynaud's disease, is an important predisposing cause. In young people the insufficiency of peripheral circulation which it causes should be attributed especially to the slight paralysis of the vasomotor system; in older persons it arises principally from atheroma, which impedes the local circulation, the effects of which are further marked by weakness of the myocardium and by the blood dyscrasia depending upon senile interstitial nephritis. It must be noted, moreover, that this asphyxia of the extremities is not necessarily followed by chilblains, and that they may develop in non-asphyxiated regions.

Defective or insufficient alimentation singularly facilitates the development of chilblains; inactivity also helps their development; cold, aided by defective conditions of circulation and of the functions of the economy, is the cause of chilblains, and it exerts still greater effects when the skin is wet or not properly dried, or when it is suddenly succeeded by heat. Chilblains may often be prevented if the parts which have been exposed to the cold are slowly and progressively warmed; the vascular dilatation which provokes the too rapid return of heat is followed by a paralysis of the blood-vessels which shows itself sometimes by erythema and sometimes by gangrene; this mechanism intervenes not only in the production of chilblains, but in that of the functional troubles which accompany them.

The conditions which predispose to the development of chilblains show what importance a general tonic medication should have in their treatment and their prophylaxis. Cod-liver oil, preparations of iodine, iron iodide, and arsenic are indicated in all cases, and their regular and prolonged employment often leads to the attenuation, in a very great proportion, of the tendency in certain subjects to chilblains.

Quinine sulphate often renders great service in an affection in which the circulatory troubles of the extremities play an indisputable part. M. Besnier recommended the prolonged employment of this medicament, with which he occasionally obtained unhoped-for results. M. Brocq found good results from the association of quinine sulphate and of ergotine in doses of from 0.75 of a grain to three grains with powdered digitalis (from 0.2 to 0.3 of a grain) and the extract of belladonna (from 0.03 to 0.06 of a grain) in the form of pills, the employment of which was prolonged during the entire winter.

Inhalations of oxygen, which accelerate nutritive changes and often give remarkable results in asphyxia of the extremities, are indicated in subjects in whom the sluggish condition of circulation predisposes them to chilblains.

Regular exercise, walking, gymnastics, cold affusions, and general stimulating lotions are also extremely useful prophylactic means in the majority of subjects in whom a former experience has demonstrated their tendency to the development of this infirmity.

The part which local causes, and particularly the direct action of thermic agents, play in the development of chilblains furnishes prophylactic indications which should not be neglected.

The hands should be covered with thick and sufficiently warm gloves, but rough woolen gloves should be avoided. They should be washed, like the face, in warm water, not in cold, and carefully dried on a towel never before a fire, and then powdered with starch or talc in order to remove every trace of dampness. The hands should not be allowed to remain too long in cold or soapy water.

Shoes and stockings should be comfortably large as the pressure of the foot on the shoe favors the action of the cold; they should be thick enough to protec the feet against the action of the cold, especially when there is snow on the ground. If sweating accompanie the chilblains, repeated foot baths must be resorted t and the parts powdered with starch or talc to which has been added from one to two per cent. of salicylic acid

Foot stoves should be absolutely proscribed, and th feet should never be dried or warmed by a fire; if the are cold the best way to warm them is to rub them with a slightly warmed piece of flannel.

Foot baths containing small quantities of astringen decoctions of walnut leaves, of ash leaves, of eucalyptu leaves, of oak bark, etc., of from five to six minute duration, constitute a very useful means of preventin frostbites by increasing the resistance of the skin.

The employment of camphorated soap, or of a cam phorated ointment (seventy-five grains of camphor an an ounce of vaseline), applied at night has often seeme efficacious to hinder the development of chilblains i subjects predisposed to them. The same results hav been obtained by gentle friction with a piece of flann saturated in strong spirit of camphor, according to M Besnier.

If the lesions are not very intense, and characteriz only by red patches not very extensive and scarce prominent, the preceding modes of treatment are in cated, particularly the local astringent baths, the ca phorated preparations, and the absorbent powders. B if the lesions are pronounced, the patches large and prominent, these modes of treatment must be associated with or replaced by other topical agents, ointments, or collodion. The substances which are incorporated in them are intended to increase the consistence of the ointment, such as zinc oxide, or to allay the pruritus, such as opiates, carbolic acid, and menthol, or they are endowed with resolvent qualities, such as lead salts, of which the most commonly used is lead subacetate, which is anticnesmatic.

When the lesions are constituted by red elements, with little or no infiltration of the skin, zinc-oxide ointment to which has been added a small quantity of carbolic acid or menthol, such as the following, will suffice to allay the pruritus and cause the rapid disappearance of the lesions:

℞ Zinc oxide	150	grains;
Carbolic acid	8	"
Vaseline, Lanoline, each	225	"

M.

Another formula is this:

℞ Zinc oxide	150	grains;
Menthol	from 3.5 to 4.5	"
Vaseline, Lanoline, each	225	"

M.

If the elements are more prominent, more inflamed, he preferable treatment is with an ointment containing lead salts, such as the following:

℞ Lead subacetate	30	grains;
Carbolic acid	8	"
Zinc oxide	225	"
Vaseline, Lanoline, each	300	"

M.

Or the following formula may be employed:

℞ Lead subacetate	30	grains;
Bismuth subnitrate	90	"
Rousseau's laudanum	15	"
Vaseline, Lanoline, Lard, each	150	"

M.

These formulæ may be modified.

Simple elastic collodion, or collodion combined with dine or salol, or better still the collodion made with etone, which makes a better covering and does not oduce the fissures which occur so frequently after the e of ordinary collodion, is an excellent protector for e diseased surfaces, and allays the pruritus; but it ould never be applied to ulcerating chilblains or to ose on which blisters have formed.

The following formula is recommended:

℞ Pyroxylin	45	grains;
Acetone	300	"
Ether, Alcohol, each	150	"
Castor oil	60	"

M.

When the chilblains resist these topical applications, itments containing silver nitrate, or painting with a y-per-cent. solution of silver nitrate or with the tinc- e of iodine, often hastens their resolution; these stances, however, can not be used on the face, be- ise of the discoloration they cause.

If blisters form, they should be opened aseptically l covered with a dressing of vaseline and boric acid, or with freshly prepared Carron oil to which has been added two per cent. of carbolic acid.

If these blisters have been ruptured, or the chilblains are ulcerated, after bathing the parts with a weak solution of corrosive sublimate, they should be covered with a dressing of vaseline and boric acid or with non-irritating plasters, such as zinc oxide, simple boric acid, and dermatol plasters, or Vidal's red plaster. If the ulcerations do not disappear, they should be touched every two days with a silver-nitrate stick, or with tincture of iodine, and dressed with camphorated brandy, with Van Swieten's liquor diluted one half with water, or with aromatic wine. These dressings should be carefully applied, particularly on the toes, and between the fingers, where, according to M. Besnier, it is well to place small tampons of absorbent cotton.

The Diagnosis and Treatment of Lumbago.—In the December number of the *Bristol Medico-chirurgical Journal* Mr. F. H. Edgeworth describes three classes of cases—those of rheumatic myalgia, rheumatic neuritis, and renal pain associated with hyperacidity of the urine. If the distinctive diagnosis is made, he says, it will be found that the treatment is thereby much simplified and restoration to health more readily brought about.

The patients of the third class complain of a dull aching pain in the lumbar region on both sides. The pain, which is constant and not made worse by movement, is not confined to the lumbar region; it extends forward round the trunk into the groins, and occasionally into the testes. The patient generally complains of scalding during micturition, and the urine, which is quite clear on first being passed, is very acid in reaction and on cooling deposits abundant brick-red urates. The muscles are not tender on palpation or percussion, but there is often a zone of hyperæsthesia of the skin, best tested by prodding with the head of a pin, extending round from the lumbar region to the lower part of the trunk for a space of about three inches above Poupart's ligament and the pubes. The pain, says the author, is evidently associated with and probably dependent on a hyperacidity of the urine; just as scalding occurs during micturition from irritation of the urethra, so the bilateral lumbar and abdominal pain results from irritation of the renal pelves; and the hyperæsthesia of the skin is a "referred" phenomenon exactly like that which happens in cases of renal calculus or gravel. The reflex retraction of the testis sometimes seen in renal calculus is not present in these cases, probably because the irritation is not sufficiently great; and the phenomena are always bilateral, though they may be more marked on one side than on the other. Treatment is simple and most successful, consisting in the administration of large doses of some indirect antacid, such as potassium citrate.

Lumbago due to rheumatic myalgia is characterized by pain in the lumbar region only, generally on both sides, though occasionally on one side only. It very rarely extends to the muscles of the anterior abdominal wall. When the patient is at rest or lying down there is no pain, which occurs only during movement. An easy way of satisfying one's self as to this, says Mr. Edgeworth, is to ask the patient to stoop down and touch his toes—the action is performed carefully and stiffly, with evident discomfort, often much greater while the patient is resuming the upright position than in stooping. The muscles are not in the least tender on palpation, and there is no hyperæsthesia of the skin either over the affected muscles or on the front wall of the abdomen. The urine is normal, and there is no scalding during micturition.

Lumbago from rheumatic neuritis resembles rheumatic myalgia in many of its features, but differs in three particulars. The pain, although rendered worse by movement, persists in a lesser degree during rest. Further, there is some tenderness on palpation, particularly over the spots where the nerves run through fasciæ. And lastly, pain is often felt along the course of the sciatic nerve or nerves as well as in the lumbar region. If a patient is seen early, there is rarely any evidence of impairment in the conductivity of the nerves.

The treatment of lumbago due to rheumatic myalgia or neuritis, says the author, consists in the administration of salicylates until toxic effects are produced, and in the use of counter-irritation, the best application for which is capsicum. The ordinary B. P. tincture is diluted with water in the proportion of one to five and applied on lint and covered with oiled silk to prevent evaporation. Mr. Edgeworth states that the effects of this treatment are extraordinary and quite inexplicable; it enables a patient to move freely and painlessly fifteen minutes after its administration, although before he could not make the least movement by reason of the pain. The result, continues the author, is, however, somewhat transitory; it wears off in an hour or so, but it can be reinduced by a fresh application, which may be done usually for half an hour four or five times a day.

Mr. Edgeworth has found that the salicylates act more speedily in cases of rheumatic neuritis than in those of rheumatic myalgia; in the former, he says, the pain usually ceases as soon as salicylism is produced, while this has to be kept up for some little time in cases of myalgia before its cessation.

Mr. Edgeworth thinks that these cases of rheumatic neuritis and myalgia have some ætiological relationship with ordinary rheumatic arthritis. If, for instance, he says, a large number of cases of lumbago are taken, and those in which the pain is renal in origin are first subtracted, in a large percentage of the remainder it will be found that the patients have suffered at one time or another from "major" rheumatic attacks. The relationship, then, he continues, of these "minor" rheumatic affections is perhaps a good deal nearer that of ordinary rheumatism than is generally supposed, and affords an explanation of the good effects produced by the administration of salicylates.

Though lumbago is from many points of view but a trivial affection, it produces so much discomfort that any increase in our power of alleviating it deserves some consideration; and the distinctive diagnosis and treatment on the lines here marked out will, he thinks, be found satisfactory in practice.

The Insidious Marrow Infection of Mammary Carcinoma.—To the *Lancet* for January 9th Dr. Herbert Snow contributes an article on this subject, in which he deals with the prevalence, the mechanism, the symptoms, the diagnosis, and the morbid anatomy of the infection.

In regard to the prevalence, he says, secondary deposit within the bone marrow is a pronounced event in eight out of every ten cases of carcinoma mammæ passing to a fatal termination. Whether the remaining two are completely exempt to the end is at present doubtful. Of a hundred and fifty seen in the out-patient room at an average duration of from ten to twelve months, ninety showed well-marked symptoms of this peculiar condition at their first visit, twenty-two showed symptoms in a slighter degree, and eight had them subsequently under observation, a total of a hundred and twenty, or eighty per cent. The physical signs were absent or doubtful in thirty, which fall into two classes: those too recent to betray them, and "atrophic" cases. Thus twelve were of from six weeks' to six months' duration only and four from six to twelve months. Of the remainder, twelve were extremely chronic forms of the disease, which had already existed from two to sixteen years, five out of the twelve having grown slowly for more than nine years. It is these "atrophic" cases in women that alone show prolonged exemption from the marrow lesion; the breasts are previously scanty or shriveled, approaching the male type; life is not terminated for a long term of years, sometimes for more than twenty or thirty, and the exemption aforesaid largely accounts for this peculiar chronicity.

Concerning the mechanism of the infection, Dr. Snow says that average examples of mammary scirrhus in women infect the lymph glands within the corresponding axilla in from six to twelve weeks from inception. The malignant cells quickly block the lymph sinuses and diversion of the current takes place in abnormal directions. These glands receive lymph from the marrow of the adjoining humerus; when they become cancerous regurgitation ensues, and thus deposit takes place within this bone, ordinarily the first affected. Again, from the inner edge of the mamma a few lymphatics normally pierce the thoracic wall and convey lymph to the mediastinal lymph glands and also to the thymus, a lymphoid organ whose rudiments are never wholly obliterated but persist through life as a fatty mass immediately behind the sternum at the junction of its upper and middle portions. Thus malignant cells reach the thymus, and, there proliferating, directly invade the sternum. In the third place, and usually after a considerable lapse of time, fragments of cell protoplasm pass from the marrow into the blood current and thence invade other bones, the opposite breast, or the viscera. This is the ordinary route; but as the infection is a mechanical process, it is to be noted that interference with the normal lymph-current (as by an operation and its resulting scar in the axilla) may preclude infection of the humerus, the flow then passing wholly to the mediastinum and thymus.

The physical signs of marrow infection are rarely evident, says Dr. Snow, until the disease has existed eighteen months, and may be delayed much longer. They are threefold, and to be classified in relation to the humerus, the sternum, and the quasi-rheumatic pains in the loins and scapulæ. The upper third of the humerus becomes tender on pressure, apparently from irritation of the periosteum; the bone also feels slightly thickened in comparison with that on the opposite side. The sternum displays a very slow and gradual bulging forward at the junction of the upper and middle portions; it is painless and is seldom noticed by the patient until her attention is directed to it. It proceeds only to the development of a sufficiently conspicuous prominence and then stops, resulting in actual tumor formation only in from two to three per cent. Lastly, the quasi-rheumatic pains are a late phenomenon and are referred to the lumbar region, scapulæ, and arm of the same side as the lesion. They are deeply seated, described as "gnawing" or "aching," are, like ordinary rheumatism, worse at night and alleviated by salicylates, but, unlike that, do not affect the articulations. In advanced cases there is extreme physical weakness with emaciation, due seemingly to the cytogenic function of the marrow.

Regarding the diagnosis, Dr. Snow states that the sternal prominence may be simulated by natural conformation of the part. It is only, he says, when this occurs in association with the gnawing lumbar and scapular pains, and particularly when its gradual development has taken place under observation, that full reliance can be placed on it as pathognomonic of the deposit.

Concerning the morbid anatomy, he says, deposit within the medullary canal of a long bone results in "white" marrow. That substance is converted into a relatively firm material as white as note paper; the existence of this suffices to indicate carcinoma without microscopic examination. With the cancellous tissue of short and flat bones the test does not hold good; the marrow is not altered in color or in consistence, even when full of cancer parenchyma, and the presence of the latter can be established only by the microscope. Decalcification takes place, however, under all circumstances, when there is cancer deposit in a bone. On exposing the head of a humerus so affected, the point of the scalpel can be readily pushed into the greater tuberosity, a rough test which, says Dr. Snow, has not been known to fail. In advanced cases, those, for instance, in which brawny œdema of the arm is present, the bone can be sliced with the knife as readily as the soft parts.

Dr. Snow states, in regard to the non-insidious cases, that he has seen only five or six times the sternal protuberance proceed to actual tumor formation with subsequent ulceration. It is in a small percentage only of the total of cases that the marrow infection betrays itself in this way by tumor growth, or, secondly, in a long bone by spontaneous fracture, or, thirdly, in the vertebræ by distortion or paralysis.

The most suggestive point, continues Dr. Snow, about this condition is its peculiar chronicity and latency, with the bearing these have on some other obscure diseases in whose phenomena the bone marrow is probably concerned. We find that, even in a malady ordinarily so acutely progressive as carcinoma, the deposits here may grow unnoticed for from four to five years or more, and they cause hardly any appreciable impairment of health until finally culminating in general diffusion by the blood. The marrow is practically never examined at necropsics unless some palpable lesion there exists. Dr. Snow states that his own investigations invite much closer attention to it. Many of the cases recorded as mollities ossium and osteitis deformans have been found associated with a malignant growth, usually sarcomatous, somewhere in the osseous system, and it seems likely that all will eventually fall into the same category. In malarious countries the bone marrow of birds is found pervaded by he *Hæmatophyllum malariæ* when it is absent from the blood. The *Filaria sanguinis hominis* doubtless retires o the same obscure resting place during the corresponding remission period. As a routine symptom marrow infection is shown only by carcinoma of the female breast —this, says the author, for mechanical and anatomical easons. It, however, may ensue upon any other form f malignant growth directly implicating the marrow, s in primary sarcomata of bone or in rectal cylindroma dherent to the sacrum. Under none of these latter condiions, however, is it so far known ever to be "insidious." Volkmann's allegation of a cure by operation when there ave been three years' apparent exemption is, of course, e says, negative, unless marrow deposits can be confiently pronounced absent.

Dr. Rose's Plan of a Public Sanitarium for Consumpves of Moderate Means.—In view of the board of ealth's project of a hospital for consumptives, a plan proposed by Dr. Achilles Rose before the German Medical Society of the City of New York so long ago as in 1892 may be of interest.

The advanced knowledge of the causes of diseases, said Dr. Rose, the progress in sanitary and medical sciences in general, have demanded and demand radical improvements in the construction of our hospitals and sanitaria. Such demand has not been responded to as regards the better knowledge of the ætiology of tuberculosis. There are no sanitaria in which not only the wealthy but likewise all tuberculous patients of moderate means may find the best conditions for the cure of their disease. In the present state of our knowledge the consideration in question here is climatic treatment.

Dr. Rose stated that the idea of advocating the establishment of a public sanitarium for tuberculous patients of the working class, large enough to accommodate applicants from all parts of our country, had occurred to him some months before. Dr. Tyndale had assisted him with his knowledge of the climatic conditions of the United States in formulating a plan, and the result of their united labors was now given. They proposed to establish a sanitarium for consumptives upon these cardinal principles:

1. To give patients the benefit of climatic treatment combined with the most advanced methods of treatment. This was to be in contradistinction to "houses of rest" or "homes for consumptives" where cure was a secondary consideration, and a fatal termination taken for granted. Fully eighty per cent. of consumptives were curable.

2. The acknowledged climatic factors for the cure of tuberculous consumption were *dryness, elevation*, and *equability of temperature.* This called for a situation at some considerable distance from the ocean—the great source of atmospheric moisture—for an elevation not less than 1,500 and not more than 5,000 feet above sea level, and for a more or less southern latitude to insure a reasonable degree of equability of temperature and to avoid extreme cold in winter.

3. What was imperatively needed and universally acknowledged by the medical profession as an absolute necessity was a sanitarium for patients of moderate means and, if possible, within easy reach of all the large cities of the Atlantic seaboard.

The proposition in detail was as follows:

1. The sanitarium is to be for patients of *moderate* means; the charges for board and treatment not to exceed five dollars a week. In course of time, separate accommodations for the wealthier class of patients are contemplated.

2. For patients of moderate means, we rely upon the large cities of the Atlantic coast: Boston, Providence, New York, Brooklyn, Philadelphia, Baltimore, Washington, Richmond, and the South.

3. The location is not to be farther north than the Alleghany and Blue Ridge Mountains of Virginia and West Virginia—that mountain region which forms a boundary between Virginia and West Virginia and extends into Maryland. All other mountain regions north of that designated, where consumptives are sent by their physicians, either to already existing sanitaria, or to shift for themselves, are totally inadequate for four weighty reasons;

a. Because they are too cold in fall and winter.

b. Because they are either not cheap enough, or when cheap can accommodate a limited number only.

c. Because they are too far from home for most patients.

d. Because of lack of systematic treatment in most of them.

To offset these disadvantages, the following suggestions are offered for consideration:

As to climatic conditions, warm, but not hot, in summer; cool, but not cold, in winter. Relative dryness of atmosphere, due to distance from the Atlantic Ocean. Elevation of from 1,500 to 2,500 feet, insuring reduced atmospheric pressure—one of the chief factors of successful treatment—and an additional element in the production of dryness of atmosphere.

To recapitulate as to temperature: Elevation secures immunity from excessive heat in summer. A southern latitude guards against excessive cold in winter.

4. The medical profession to be interested, also the leading local, State, and national societies, and all the medical journals.

5. A combination of climatic treatment with present advanced other methods will yield results which can not fail to attract widespread attention and give satisfaction.

6. To make the institution additionally *self-sustaining* and furnish much needed occupation to a large class of patients who would otherwise be brooding over their misfortunes. To this end a tract of land should be acquired, sufficiently large to enable us to raise the natural products of the soil, vegetables, fruits and poultry, and cattle, thus supplying the institution with food of the best kind on the one hand and furnishing light occupation to patients on the other.

Particular attention is drawn to two highly important points in this connection: A fertile soil is to be acquired around or near the institution.

The region selected is only twelve hours by rail from New York city.

So far as they were then able to ascertain, some of the most favorable situations were on the line of the Chesapeake and Ohio Railroad. Alton and White Sulphur Springs also were mentioned.

Rhymes of the Season.—Dr. S. K. Davis, of Libertyville, Iowa, sends us the following:

When the holidays are ended,
  And the people have again
From vile luxury descended
  To their common fare; why, then

The physician from seclusion
  Soon emerges with his ease,
While smiles in rapt profusion
  Light up his thoughtful face.

For the ones so lately dining
  On roast gander are, alas,
On his feathers now reclining
  And are dining on blue mass.

And the ones who bowed so proudly
  While they worshiped at the shrine
Of Bacchus now are loudly
  Calling on that old divine,

Æsculapius, whom tradition
  Tells the ancients did implore
When the demons from perdition
  Made their gastric regions sore.

Now the votaries of Venus
  From that siren's charms take flight
With a — well, just between us,
  It is ready to ignite.

And the deacon who made merry
  At the feast of Major Brown,
Practised lavage with old sherry,
  Now a divan's holding down.

While his stomach, sore with dining
  And with wining, naught contains,
Save a hyperæmic lining
  And some energetic pains.

All the menu he partakes of
  Now is milk and milk of lime,
And some phenol for the sake of
  That dire nausea all the time.

And the major too is sighing,
  Almost dying with his toe,
And lithia water trying
  From the springs of Buffalo.

E'en the wee ones have "night terrors";
  Guess they nurse it from their ma's,
For these dietetic errors
  Are not limited to pa's.

So the doctor chuckles gayly
  As the list begins to grow,
And compares the business daily
  With a week or two ago.

While the clinking of argentum
  In its pure metallic state,
Save alloy ten per centum,
  Does his cardium elate.

And his centres of emotion
  From paresis now revive
To a state of high commotion
  At the tender of a "five."

The True Nature of "Green Cancer."—At a recent meeting of the Société des sciences médicales de Lyon, a report of which appears in the *Gazette hebdomadaire de médecine et de chirurgie* for January 7th, M. Paviot and M. Gallois stated that the morbid entity which was isolated in 1834 by Aran, and had since been known under the name of green cancer, was, according to the examination in a case recently observed in M. Colrat's service, but a manifestation of leucocythæmia, a fact of which it was scarcely necessary to show the importance from a diagnostic and prognostic point of view.

The neoplasm presented in reality, in this case, an absolute clinical similarity to the malignant variety of the symmetrical lymphoid tumors of the orbit which were described by Gayet and Osterwald. The child who had been attacked with it and died in four months had a leucocythæmic liver. Hence, the authors had no hesitation in concluding that: 1. The "green cancer" of Aran (the chloroma of King) was constituted by a mass of tangible lymphomata which became apparent by reason of their orbital, temporal, and occipital localization. 2. The clinical progress and the results of the autopsy authorized them to connect it with leucocythæmia, which in its evolution preceded, as the pallor and the general grave condition testified, the appearance of these orbital lymphomata.

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Original Communications.

ANÆSTHESIA OF THE TRUNK IN LOCOMOTOR ATAXIA.

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SINCE the time of Romberg and Duchenne the sensory disturbances of tabes dorsalis have been subjected to careful study by many good observers. Considering this fact, it seems remarkable that the anæsthesia of the trunk, to which I wish to call attention, should, for so long a time, have escaped detection. It is striking in location, limitation, and extreme frequency. Hitzig * has the credit of having first called attention to its occurrence and principal characteristics, but Laehr † has made by far the most extensive study of the symptom. His material embraced sixty cases of locomotor ataxia, many of them having been examined repeatedly.

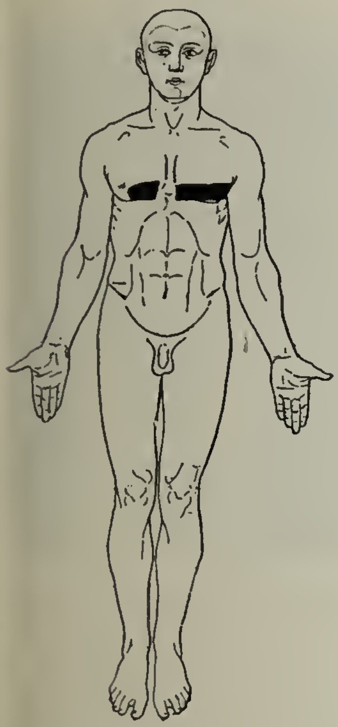

FIG. 1 *a*.

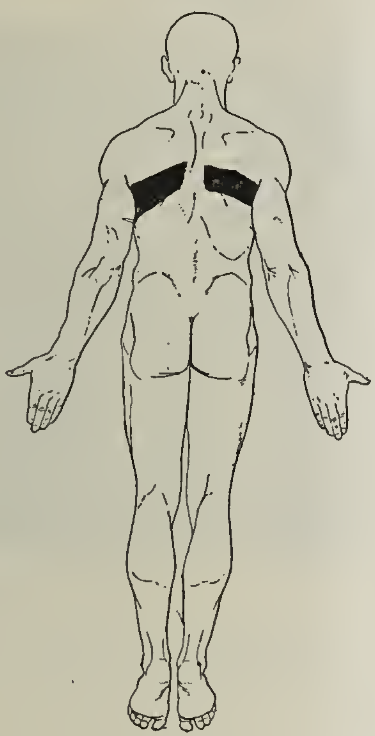

FIG. 1 *b*.

This trunk anæsthesia is found in the form of a band about the body, generally in the region of the nipple, and presents a number of interesting peculiaries, many of which, for the present, must be considered as unique and unexplained. Qualitatively it is quite distinct from the sensory blunting on the lower xtremities so generally present in tabes. The latter is ubstantially an analgesia (diminution or loss of the ain sense), while the trunk anæsthesia is essentially actile. When very slight, it is discoverable only to ghtest touches, and sensation to pain is quite normal; hen more marked, there is also some degree of analgesia, but the band so affected is narrower than that of tactile anæsthesia. The area begins to develop as a narrow zone—or rather two half zones, one about either half of the body—and gradually broadens as the pathological basis progresses. In a very early stage the zones may be incomplete, not reaching to the middle line, or restricted to the front or back alone. The cases from which Figs. 1, 2, and 3 are taken are illustrative. Fig. 1, which is from a case that is probably incipient tabes, shows the band of anæsthesia broken up into four plaques by interruptions in front, behind, and in the axillary line. It should be noted that although this case is considered to be one of incipient tabes, the symptoms are too incomplete to make a positive diagnosis possible. Fig. 2 is from a well-developed case, in which the only anæsthesia on the trunk was the ill-defined area depicted. Fig. 3 represents the anæsthetic trunk area in a beginning but undoubted case of tabes. It

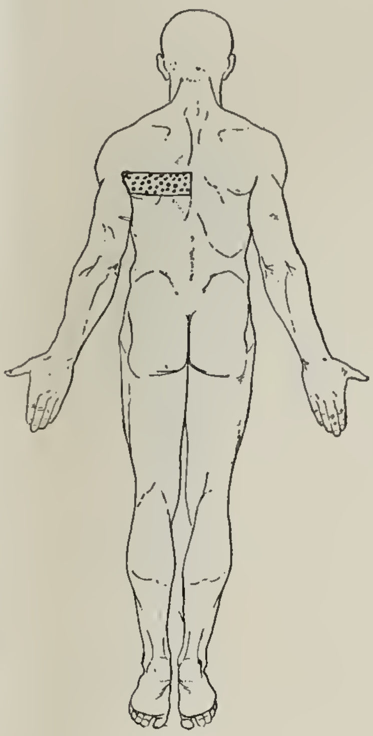

FIG. 2.

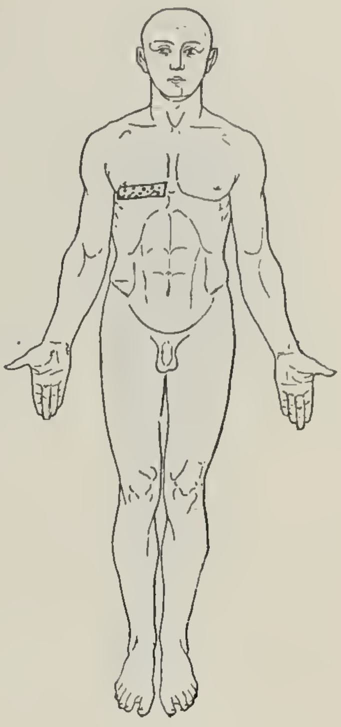

FIG. 3.

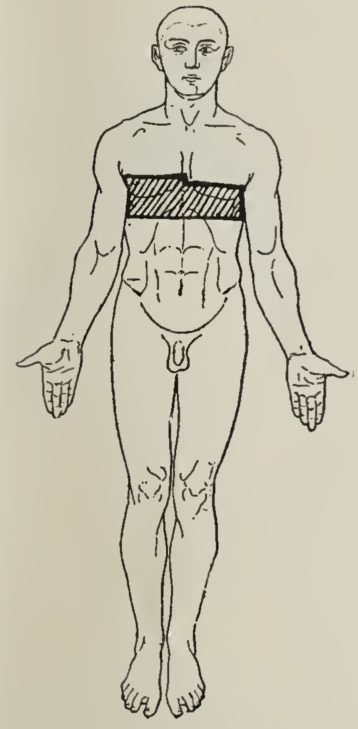

FIG. 4.

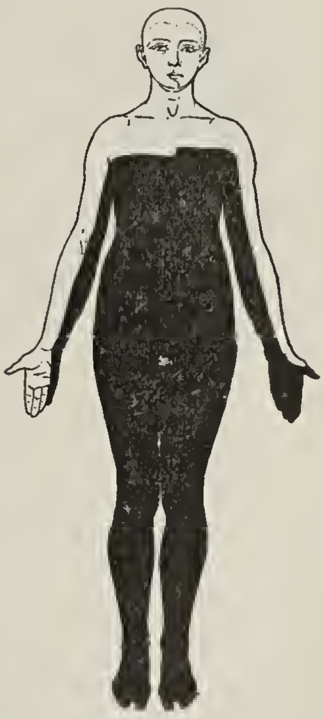

FIG. 5.

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* *Ueber traumatische Tabes und die Pathogenese der Tabes im Allgeein.* Berlin, 1894.

† *Archiv für Psych. und Nerv.*, 1895, Bd. xxvii, Heft 3.

is limited to the front of one side and is very narrow. In other cases there may be no real anæsthesia, but simply a diminished accuracy in locating tactile impressions. Such a case is illustrated by Fig. 4. This patient recognized the lightest touches of a camel's-hair brush, but in the area indicated was unable to locate them with normal certainty. The examination of localizing power is, of course, made difficult if there be ataxia of the arms. The result, in any event, is to be accepted with some reserve, as examination of a number of healthy individuals has taught me that accuracy in localizing touch varies greatly. Furthermore, the part of the body under consideration is normally not very sensitive and localization not very exact.

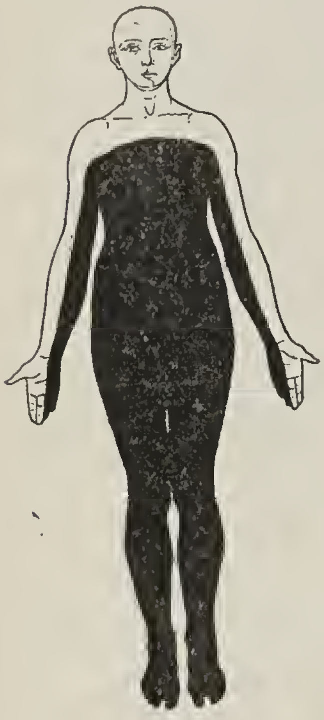
FIG. 6 *a*.

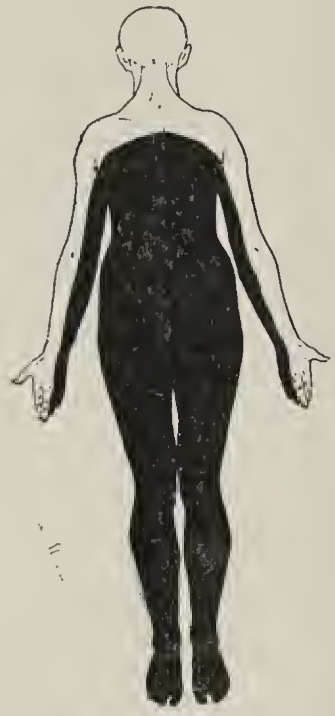
FIG. 6 *b*.

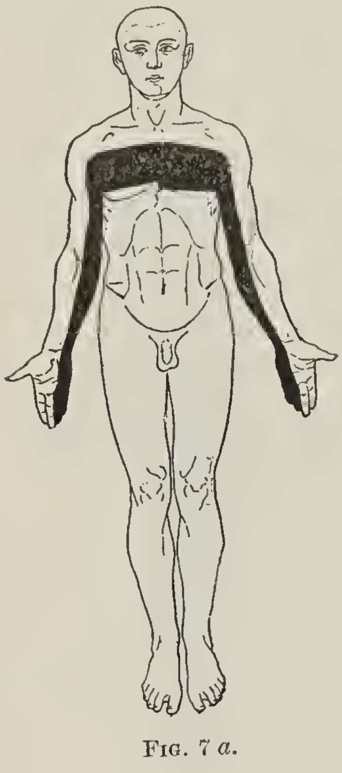
FIG. 7 *a*.

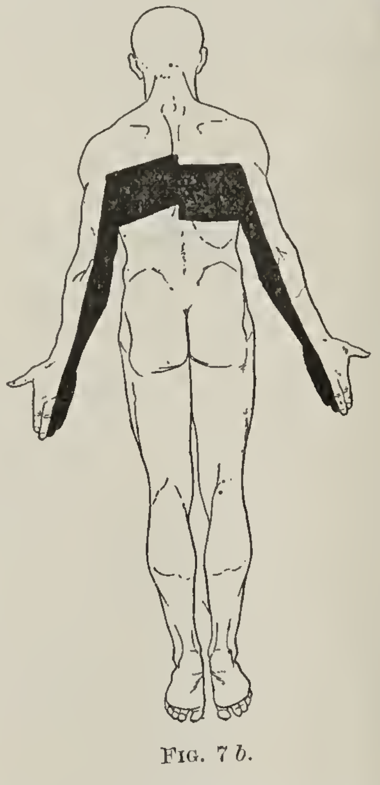
FIG. 7 *b*.

Laehr says that although the anæsthesia may be broader on one side of the body than the other, it is so by virtue of extension downward, the upper borders remaining nearly always on a level. To this I have found numerous exceptions. See Figs. 7, 10, 12, and 13. He says, too, that the upper border is always more distinctly defined than the lower. This difference has not seemed to me to be at all striking, but I have found that either border recedes very considerably when located by approaching the anæsthetic zone as compared to its location defined by approaching the normal surface. That is, if the examiner start in the anæsthetic area and gradually pass up or down with successive touches until one is perceived by the patient, a broader zone is outlined than if he start where sensation is normal and pass into the anæsthetic area where a touch is unperceived.

Perhaps the most interesting peculiarity is that the area of anæsthesia does not correspond to the cutaneous distribution of the intercostal nerves, but represents the innervation from spinal-cord segments. It will be seen at once from the figures that it is more horizontal than the course of the spinal nerves. For instance, Figs. 14, 15, and 16 represent the anæsthetic area in a case of tabes as outlined and stained with tincture of iodine. Figs. 17 and 18 show the direction of the intercosta
spaces in the same patient. As the anæsthesia extend
upward on the trunk it gradually invades the upper ex
tremities exactly as it does in lesions of the spinal cor
or of the posterior nerve roots. Experiments on monkey
and clinical experience in injuries and other definitel
localized affections of the cord in man have show
that as such lesions are located progressively highe
or pass upward the anæsthesia invades the arm in
regular way. It first affects the inner surface of th
upper arm, then the entire ulnar border, and graduall
passes outward until the whole arm is involved. W
note exactly the same thing in the extension of tru
anæsthesia in locomotor ataxia. When it has advanc
to the third rib, at least (Laehr), it first appears
the arm as a tongue extending down from the axil
Further advance is down the ulnar surface and th
outward. This correspondence is strikingly shown

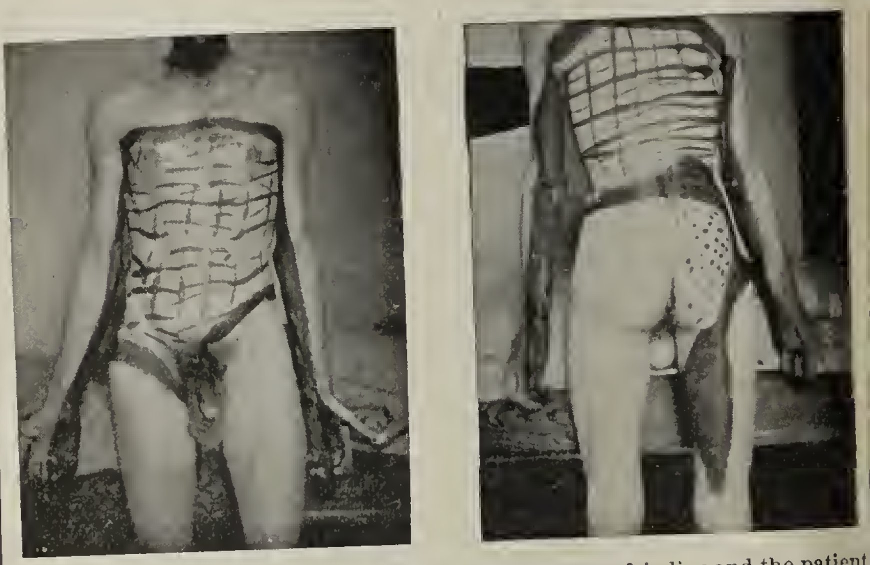
FIG. 8.—The anæsthetic area was stained with tincture of iodine and the patient photographed. The stripes indicate complete anæsthesia the same as solid stain. They were chosen simply to save time. The dots indicate an area of doubtful anæsthesia.

Figs. 5, 6, 7, 8, 9, and 10. Fig. 5 is a combination of two figures from Thorburn.*

The outline on the right side of the figure (supposing it to be a person facing the reader) depicts the anæsthesia in a case of transverse lesion of the cord between the seventh and eighth cervical segments; that on the left side, in a lesion between the fifth and sixth segments. Fig. 6, taken from Bruns,† shows the distribution of anæsthesia in a cord lesion between the sixth and seventh cervical segments. If, now, these figures are compared with Figs. 7 and 8 from cases of locomotor ataxia, no comment is necessary to emphasize the similarity. Fig. 9 is from the patient represented in Fig. 7, but the examination was made after two months of treatment. Fig. 10 is from a case of well-developed tabes. The tongue of anæsthesia that extends on to the upper arm in these cases corresponds almost exactly to the area that Head ‡ assigns to the second dorsal root. The patient (tabes) from whom Fig. 11 was taken had a like extension on to the arm, but, as it was limited to the inner surface, it could not be made visible in the figure.

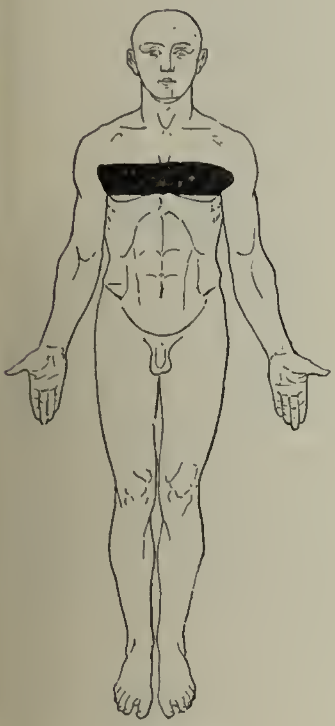
FIG. 9 *a*.

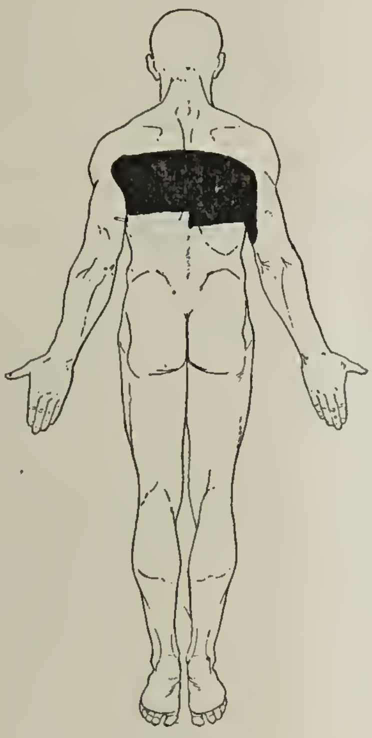
FIG. 9 *b*.

Another characteristic is, that when the anæsthesia is slight it may almost or quite disappear if tested for a few minutes. Figs. 2 and 3 are from such cases. In either case, although at first a distinct anæsthetic plaque could be made out, a continuation of the examination in an attempt to accurately define it resulted in its entire disappearance, so that the slightest touch could be felt. In the case furnishing Fig. 3, after the anæsthesia had thus disappeared it was easy to demonstrate a diminution of localizing power in the previously anæsthetic region. Similar to this disappearance of the anæsthesia is the fact that the boundaries, which are never sharply defined, frequently recede as the examination progresses.

In traumatism of the spinal cord, myelitis, etc., there is frequently a narrow band of hyperæsthesia * adjoining the anæsthesia, and a similar condition may often be found near the anæsthetic area of tabes. In a few of my cases it was very striking. Hitzig says that this hyperæsthetic zone is particularly sensitive to cold. Within the limits of the hyperæsthesia the superficial reflexes are exaggerated; for instance, in the case illustrated by Fig. 11, the liveliest reflexes were excited by light stroking with a camel's-hair brush anywhere within two or three inches of the anæsthetic region. Laehr attempts to explain the rather conflicting state-

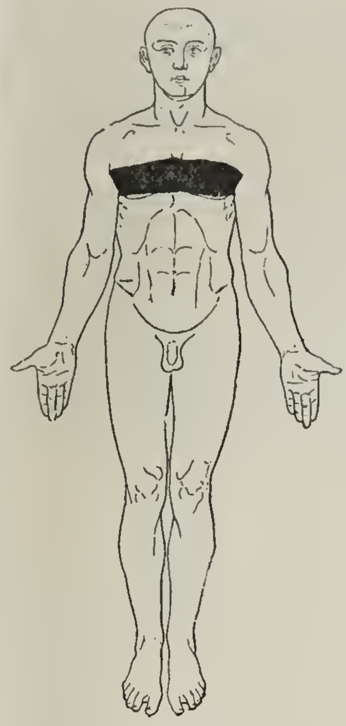
FIG. 10 *a*.

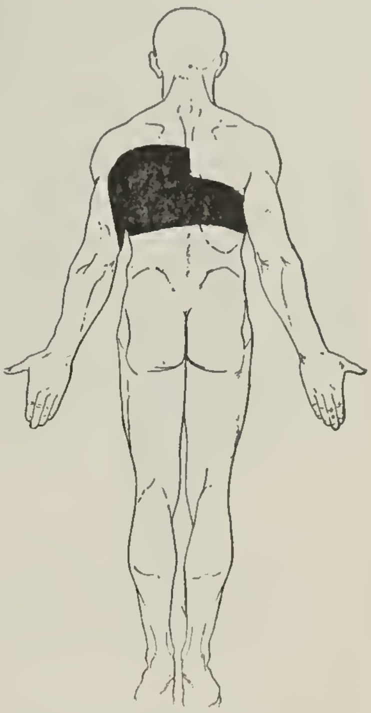
FIG. 10 *b*.

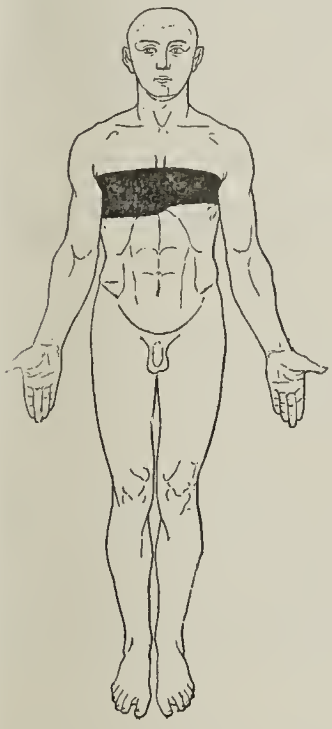
FIG. 11 *a*.

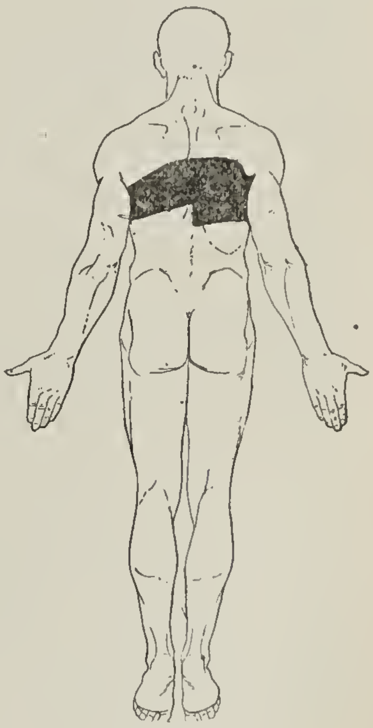
FIG. 11 *b*.

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* *Brain*, 1893, p. 355.

† *Deutsche medicinische Wochenschrift*, 1889, p. 984.

‡ *Brain*, 1893, pp. 1 to 133. Plate.

* This is really a zone of hyperalgesia. I think Leyden was the first to point out that true hyperæsthesia seldom if ever exists as a symptom of organic nervous disease—that is, a hypersensitiveness that renders perceptible a stimulus that could not be perceived by the patient in a normal condition.

ments regarding the condition of the superficial reflexes in tabes by the varying location of the tactile anæsthesia. Should the place on the skin stimulated to elicit a superficial reflex be anæsthetic, no reflex will be produced; should such place fall within a hyperæsthetic area, the reflex will be exaggerated. This explanation seems to me to be reasonable, and is sustained by my experience, so far as it goes.

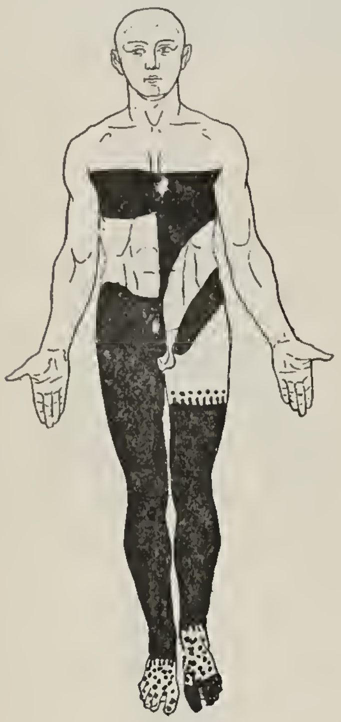

FIG. 12 *a.*

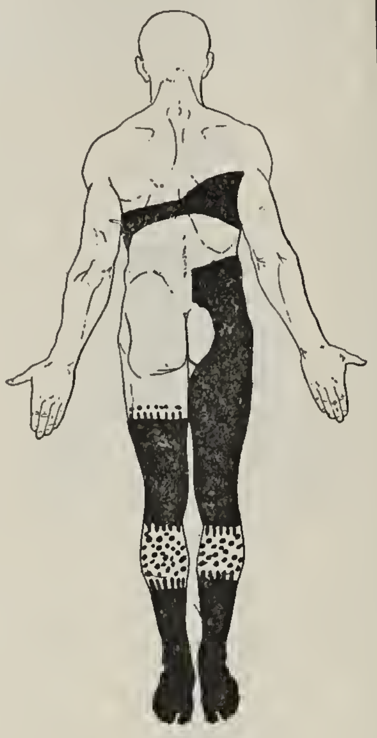

FIG. 12 *b.*

Another interesting fact regarding trunk anæsthesia in tabes, and one that may possibly throw some light on the pathology of the disease, is that the zones may be double; which would indicate the simultaneous invasion of different levels of the cord. This is plentifully illustrated by the cases of Laehr, and I had observed it some time before the appearance of his paper. In one case I outlined an area in the usual location and another about the lower abdomen. Fig. 12,[*] I think, illustrates a similar instance, although on one side the abdominal zone has extended on to the lower extremity. The dotted shading indicates areas where anæsthesia was absent or doubtful. These areas, by the way, correspond to those pointed out by Oulmont [†] a number of years ago. I may add that the distribution of analgesia in this case was entirely different from that of the tactile anæsthesia. There was simply general analgesia, excepting on the head, neck, and hands, where it was doubtful or absent.

That this peculiar trunk anæsthesia is of great frequency in tabes can not be doubted. Hitzig believes it to be practically always present. Of the sixty cases examined by Laehr it was absent in only five, and these were complicated by paretic dementia—that is, they were cases in which the cerebral symptoms predominated and largely overshadowed the spinal symptoms. In two additional cases the symptom was at first absent, but developed under observation. They were cases in which optic atrophy was a prominent symptom and may therefore be said to have been of the cerebral type. My own statistics are not nearly so large. Of twenty cases of locomotor ataxia, including one doubtful case in which trunk anæsthesia was absent, seventeen showed the symptom to a greater or less degree. I should consider eighty-five per cent. a conservative estimate of its incidence, although in incipient cases and in those complicating paretic dementia the frequency is, in all probability, considerably less.

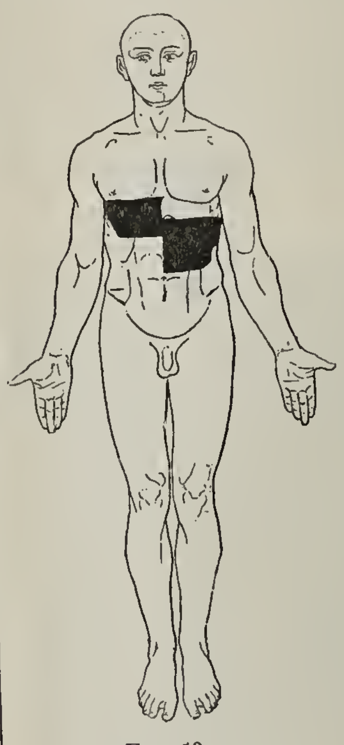

FIG. 13 *a.*

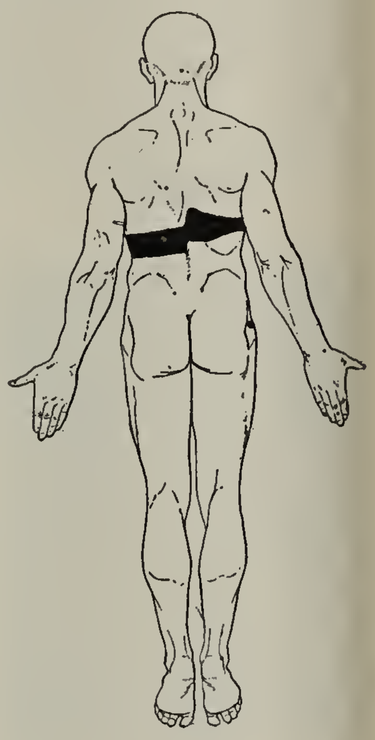

FIG. 13 *b.*

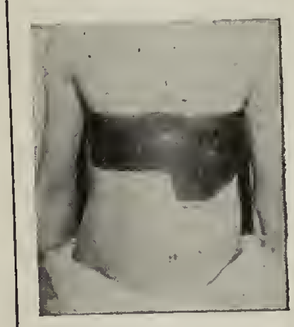

FIG. 14.

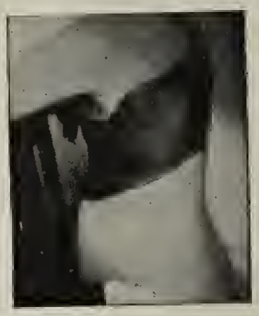

FIG. 15.

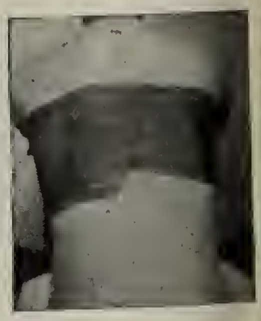

FIG. 16.

The relation of trunk anæsthesia to the other symptoms of tabes and the general progress of the disease is not yet determined and will require for its definition a much wider experience. In a general way, the more advanced the case, the more pronounced is the anæsthesia and the greater its superficial extent. Figs. 8, 11, and 12, for instance, showing extensive anæsthesia, are from advanced cases, and Figs. 1 and 3 from patients in the first stage. The patient represented b Fig. 8 could walk only a few steps alone when first seen but improved somewhat under treatment by gymnastics Fig. 11 is taken from a man of fifty-eight years, wh walks with difficulty, was for a time entirely incapacitated for pursuing his occupation (bookbinder), and ha all the principal symptoms of tabes to a marked degree

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[*] This case was examined in March or April, 1894, in the service of Professor Gowers, at the Queen's Square Hospital, and I am indebted to him for the privilege of publishing it.

[†] *Gaz. méd.*, 1877, No. 19.

The patient who supplied Fig. 12 was bed-fast. Paralysis of one abducens and lancinating pains were almost the only complaints respectively of the patients furnishing Figs. 1 and 3. Locomotion in either case was practically normal. But exceptions to this correspondence between the severity of the disease and the extent of the symptom under consideration are numerous. Fig. 7 is taken from a patient who complains of little but sexual impotence, while Fig. 2 shows the trunk anæsthesia in a patient who can not go about without an assistant and who has almost completely lost the sense of pain in the lower extremities. I may also mention in this connection the case of a gentleman with typical locomotor ataxia who has considerable difficulty in walking, marked analgesia of the lower extremities, very distressing pains and paræsthesiæ, loss of sexual power, and considerable bladder disturbance, and yet has absolutely no anæsthesia of the trunk.

The experience of Laehr that the body anæsthesia is apt to be slight or wanting in cases with optic atrophy is illustrated by Fig. 4. This patient has double optic atrophy, producing on the right side complete amaurosis; he has the classical symptoms of tabes, but has, as before noted, no real anæsthesia on the trunk. A striking exception, if, indeed, there be a rule, is shown by Fig. 13. The patient is absolutely blind from optic atrophy, but has extensive and pronounced trunk anæsthesia. It should be remarked, however, that other spinal symptoms are prominent, and that the case has been rather unusual in the rapidity of its progress. It is well known that the cases in which optic atrophy occurs ordinarily progress so slowly, in other respects, as to remain almost at a standstill.

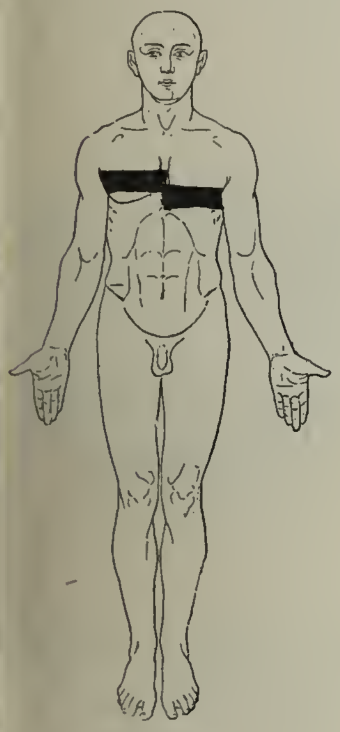

Fig. 17 *a*.

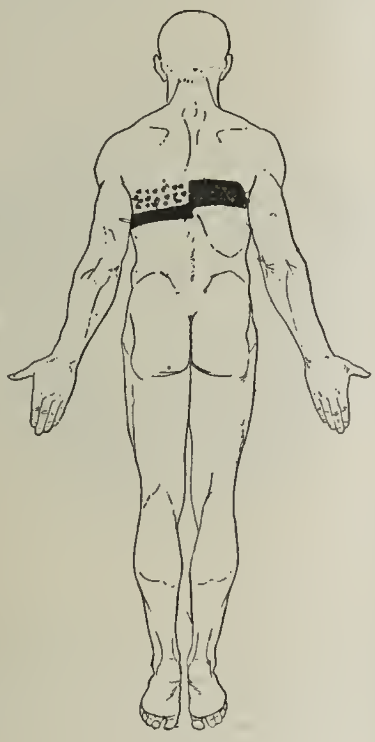

Fig. 17 *b*.

As before stated, the five cases in which Laehr found no anæsthesia were paretic dements. In five additional cases of dementia paralytica with tabes, trunk anæsthesia was found, but it was not marked, and was very changeable. But to this rule there must also be striking exceptions. I have examined for the symptom in only three cases, in which both diseases were undoubtedly present. One of them had no anæsthesia of the trunk; the other two had it to a marked degree. Figs. 14, 15, and 16 are made from photographs of one of these patients after the anæsthetic zone had been painted with tincture of iodine.*

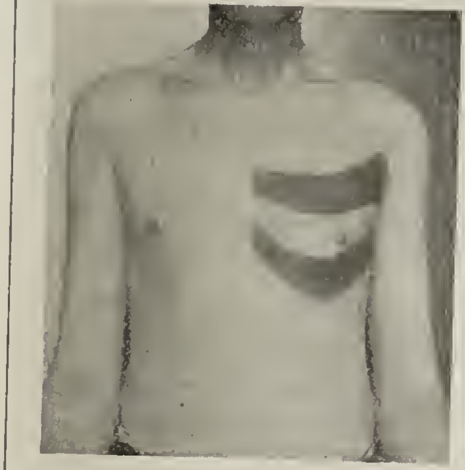

Fig. 18.

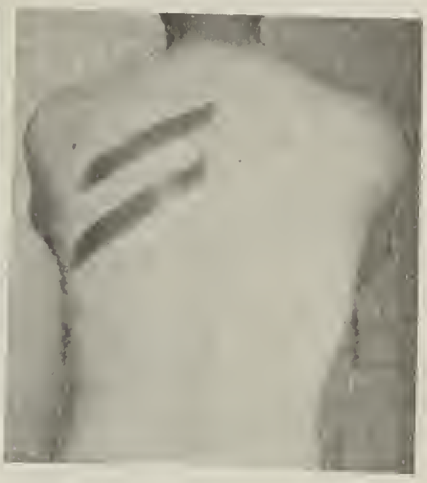

Fig. 19.

The diagnostic value of the symptom has yet to be determined, but it probably is not very great. Laehr found it early, but, except in one case, not so early as analgesia of the legs. It can be said to have been a diagnostic aid in only one of my cases (Fig. 1) and it is not absolutely certain that the case is one of tabes, though I believe that it is.

The question at once arises, May this band of anæsthesia be found in other diseases, especially in those liable to be mistaken for locomotor ataxia? Here, again, we must await the verdict of further experience, but even now a provisional answer in the affirmative may be given. Any process involving the posterior nerve roots in the dorsal region might cause such an anæsthetic band. Localized meningitis, tumor, or caries of the spine may be mentioned as such causative lesions. In hysteria plaques may be present similar to the incomplete zones already spoken of (Figs. 1, 2, and 3). Indeed, I have now under my care a man with hysteria who presented such a plaque on the right side. Similar plaques and irregular areas are frequently found in syringomyelia, and a case may easily be imagined in which the anæsthetic area would take the form found in tabes. But none of the diseases just named would likely be mistaken for locomotor ataxia, and I know of no case very similar to this disease, or one that could be called pseudo-tabes, in which a band of trunk anæsthesia was found, except the following:

The patient was a man of forty-seven years, whom I was asked to see about a year ago. The previous history was negative, except that about a year before he had suffered considerably from some stomach trouble for which he went to Hot Springs, Dakota. By the spring of 1895, after several months of treatment, he had apparently quite regained his health, but about a month later began to notice some uncertainty and a feeling of weakness in the legs. These symptoms increased rather rapidly, and when I saw him, six months after the beginning of the affection, he was barely able to walk a few steps with the assistance of two canes. Inco-ordination was marked, and there was considerable weakness; the knee-jerks were absent; there was analgesia and some anæsthesia of the lower extremities, analgesia of the ulnar trunk, complete loss of sexual power, and considerable bladder disturbance. One pupil only could be examined, but that responded to light. One of the best neurologists in the West had made a diagnosis of locomotor ataxia. Although specific infection was strenuously, and I think honestly, denied, and no evidence of it could be found on examination, I made a diagnosis of syphilitic pseudo-tabes and the patient was put on active antisyphilitic treatment. He rapidly improved. At the end of five months he could walk with ease and certainty, had regained sexual and vesical power, and (subjectively) normal sensation in the legs. He has remained active and well to the present time. At my first examination I discovered a broad band of trunk anæsthesia. Unfortunately, the notes taken at the time have been lost, but Dr. Bennett, with whom I saw the case, agrees with me that it was very broad, almost horizontal, and extended from about the level of the nipples downward, we think, almost to the umbilicus. On examination a few weeks ago, I found a band of anæsthesia still persisting about the trunk, but much narrower than before. Fig. 19 illustrates the present condition. The dots indicate a region where the anæsthesia was doubtful and could not be outlined. This anæsthetic zone corresponds in every respect to that found in tabes, although the case undoubtedly was one of syphilis of the cord and not locomotor ataxia. The patient still has no knee-jerks, and the question arises whether he may not now have incipient tabes succeeding the outspoken syphilis. It would be practically impossible to disprove an assertion to that effect, but I think it much more reasonable to suppose that the anæsthetic band and the loss of knee-jerk are due to irreparable injury inflicted by the syphilitic lesion, or to some part of that lesion rendered stationary, but not removed by the treatment. The case, in any event, is to be regarded as unique in the literature of trunk anæsthesia.

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* For the photographs and those from which Fig. 8 is made I am indebted to Dr. McCorm, late of the Illinois Eastern Hospital for the Insane, who kindly prepared them for me.

The anatomical basis and the exact location of the lesion upon which the trunk anæsthesia of tabes depends must, in the absence of careful microscopic examinations, remain largely a matter of surmise. I am inclined to regard the lesion as intramedullary and affecting principally the long fibres that pass directly upward in the posterior columns, leaving uninjured those that pass by various ways into the posterior gray horns and columns of Clarke.

VENETIAN BUILDING.

REPORT OF A CASE OF INCOMPLETE FRACTURE OF THE LEFT CORNU OF THE THYREOID CARTILAGE,

RESULTING FROM SELF-INFLICTED VIOLENCE.*

By A. W. DE ROALDES, M.D.,
NEW ORLEANS.

On the evening of April 7, 1891, R. H. B., aged thirty-seven years, born in New Orleans, an employee of the American Sugar Refining Company, while eating olives, accidentally swallowed one of the seeds, which seemed to him to have lodged itself in the larynx. Alarmed at the serious spell of suffocation which followed, the patient ran immediately from his working place to the street and incited vomiting by putting his finger in his throat, but he does not know whether he expelled the seed or not; at any rate, the sensation of a foreign body in the larynx did not disappear, and therefore the patient began to manipulate his larynx externally, in a rather forcible and even violent manner. Patient remarks that his whole throat "cracked" under the violent pressure of his fingers, but can not localize this cracking to any given spot on the left side of his larynx.

Failing to obtain relief from the sensation, he applied next morning to the Eye, Ear, Nose, and Throat Hospital of the city, when his larynx was carefully examined, but no foreign body could be found. Indeed, an angular, V-shaped projection was observed (as shown in Fig. 1) springing from the left lateral wall in the direction of the arytæno-epiglottidean fold, at a somewhat right angle. No mark of external violence could be observed. Under thorough cocainization the upper arm of the projection was found with the probe to be less consistent than the other one. The mucous membrane was intact, but could be seen as distinctly lifted up by some underlying resisting obstacle. By digital examination, the parts were carefully surveyed, and the angular projection could almost be smoothed down by continued pressure from within. Upon removal of the finger, however, the projecting mass would reappear. This failure to restore and retain in place the deviated parts

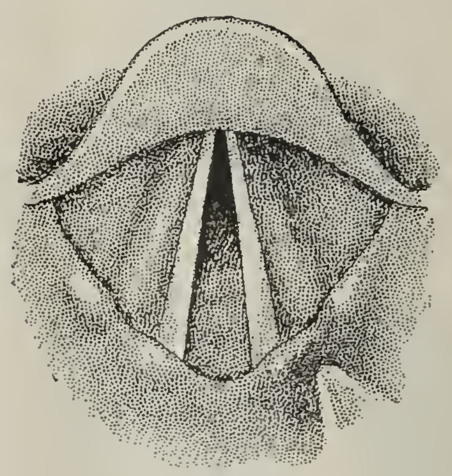

FIG. 1.

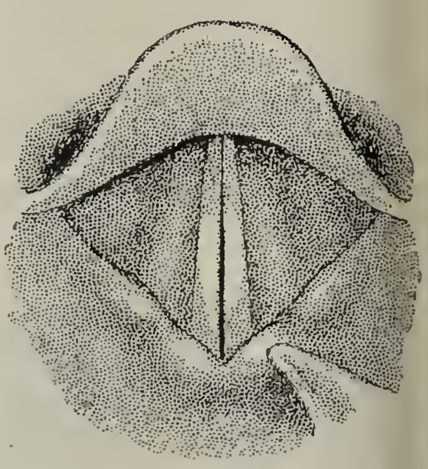

FIG. 2.

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* Read before the American Laryngological Association at its eighteenth annual congress.

was not followed by an attempt to overcome the resiliency by breaking through the bend of the lower arm. During the act of phonation (as seen in Fig. 2), which was not otherwise interfered with, the angular projection was seen to advance toward the left arytænoid eminence, almost reaching the free border of the arytæno-epiglottidean fold. After a few days, the disagreeable sensation of a foreign body in the throat gradually diminished, but the patient, seen a few weeks ago, and presenting yet the same objective appearances, stated that months elapsed before he was entirely rid of his unpleasant subjective sensations.

In making in this case the diagnosis of an incomplete fracture of the left superior cornu of the thyreoid cartilage, my assistant, Dr. A. McShane, and myself were guided by the following anatomical considerations:

In this locality we find on the outer side only two normal structures that could give rise to the appearance noted in the patient's larynx. These are: 1st, the great cornu of the hyoid bone; 2d, the superior cornu of the thyreoid cartilage. These two projections are connected by means of the thyreo-hyoid ligament, which is continuous with the thyreo-hyoid membrane. There is no synovial membrane between the cornua. The thyreo-hyoid membrane is so placed as to produce a strong attachment between the hyoid bone and the thyreoid cartilage while allowing great freedom of movement.

The angular protrusion in the upper part of the larynx might have been due to a displacement of the cornu of either the hyoid bone or the thyreoid cartilage. It could not have been caused by displacement of the hyoid bone, for the whole of the bone would have been correspondingly displaced unless there had been a fracture severing the greater cornu from the rest of the bone. In this case there was no such fracture, neither was the body nor the right half of the hyoid bone out of place.

The only other explanation left to us is that the superior cornu of the thyreoid cartilage was pushed inward. This will account for one arm, the lower and more resisting one of the projecting angle. It will be borne in mind that the tip of the cornu gives attachment to an elastic ligament capable of some extension. When the cornu of the thyreoid cartilage is pushed inward, it draws the thyreo-hyoid ligament after it, causing the mucous membrane to bulge, and in this particular case forming the upper and softer arm of the V-shaped prominence. We therefore had to deal with a displacement of the left superior cornu of the thyreoid cartilage (corresponding in character to a green-stick fracture), the cause of which may be sought in the rather violent pressure made upon the sides of the larynx when the patient swallowed the olive seed. The increased prominence of the angular mass, caused by the emission of a high note, was brought about in this manner: In the ascending scales, the thyreoid cartilage is drawn upward toward the hyoid bone; and when the larynx is in repose again the thyreoid cartilage drops down again. When the cartilage is raised, the normal cornua rise in a vertical plane, but when there is any deviation, as in this case, the displacement becomes more accentuated when the cartilage is pulled upward; and when it drops down again it draws the cornu with it, and somewhat smoothes down the irregularity by dragging the cornu into line.

A REMARKABLE CASE OF
FIBRO-CHONDROMA OF BRANCHIAL ORIGIN
(PHARYNGEAL TERATOMA)
REMOVED FROM THE THROAT OF AN INFANT SIX WEEKS OLD.*

By A. W. de ROALDES, M. D.,
NEW ORLEANS.

The specimen which I exhibit to you, in connection with the accompanying photographs and cuts, was removed a few days ago from the throat of an infant child six weeks old. The history of the case is as follows:

H. J. H., male, aged six weeks, born in New Orleans, was presented by his mother at the outdoor clinic of the Eye, Ear, Nose, and Throat Hospital of this city, recommended by the family physician, Dr. Lovell. The examining surgeon, Dr. A. McShane, recognizing at once an unusual pharyngeal growth, called my attention to the case. The mother relates that almost immediately after birth the child was heard to produce "a queer noise" while breathing. When put to the breast, it could not nurse and seemed to strangle, this condition continuing until now. The bad suffocating spells did not, however, recur more than once or twice a week. They were at first ascribed to great accumulation of phlegm in the throat and bronchial tubes, then to a bad attack of spasmodic croup. A few days ago another very violent attack led Dr. Lovell to examine closely into the case, when he diagnosticated the presence of a growth. and advised the parents to bring the child to our clinic. The parents are almost pure German, of ordinary mentality and good apparent habits. The father is aged twenty-eight years and the mother twenty-six. There is no history of any family or hereditary deformity as far back as they can go, and no reason to allege any maternal impression during pregnancy. The child is of ordinary weight; the closest investigation fails to reveal any congenital defect beyond the growth just referred to. Its ears are perfect in every respect.

Upon opening the mouth widely and depressing the tongue nothing very striking is observed at first; but, when the infant begins to cry, a movable growth, hidden in the postnasal space, is seen to emerge imperfectly from behind the soft palate and place itself in what I would call first position. With a continuation of the excitement the growth is apt to fall lower down into the pharynx, as far down as the vestibule of the larynx, in its second position. Gradually, after spells of coughing and successive efforts of violent expiration, the tumor is apt to recede back into the nasopharynx or to place itself on the base of the tongue, which finally propels it forward on its dorsum in its third position (as represented in Fig. 1), with its lobule pointing forward on the middle line, giving the appearance at first sight of a supernumerary tongue, with the exception of its integument, which is decidedly cutaneous instead of mucous. From its third position, the tumor soon rotates around a marked point of attachment and places itself in the fourth position (as represented in Fig. 2), with an apparent size comparable to the last joint of the thumb of an adult hand. In this final position the growth reached fully the alveolar border of the superior maxilla. Upon introducing my little finger between the tongue and the tumor, I could feel that its lower surface presented distinctly a hardened, cartilaginous nucleus, and that the mass seemed to be attached to the left side of the bucco-pharyngeal cavity, but, owing to the lack of room, I could not reach farther than the fauces. The postnasal space, as ascertained with a probe through the nostrils, was found to be comparatively free, as compared with its fullness when the growth was in its first position. After the examination the case was referred back to the next day in order to present it to my polyclinic class. On that occasion, during an attempt to show exactly the point of implantation of the growth, the little patient was seized with such a violent attack of suffocation, cyanosis of the face, suffusion of the eyes, etc., that it was deemed prudent to at once extirpate the mass. For that purpose a Wright's snare was quickly wired, and the tumor, then down to the vestibule of the larynx, was teased to place itself in its fourth position (Fig. 2), when it was grasped firmly with a forceps, the catch of which shows its imprint in Figs. 3 and 4.

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* Read before the American Laryngological Association at its eighteenth annual congress.

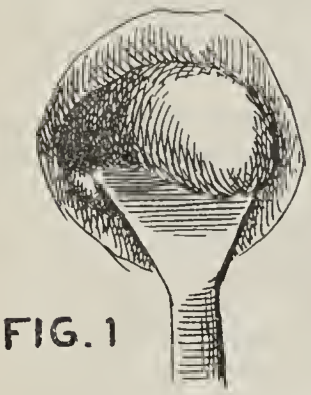
FIG. 1

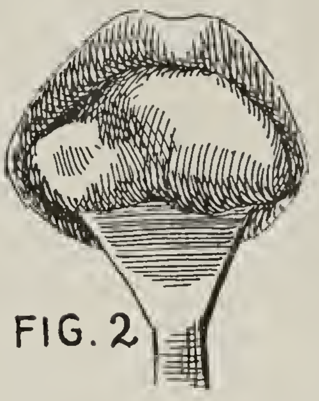
FIG. 2

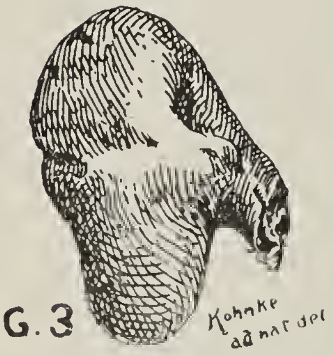

FIG. 3

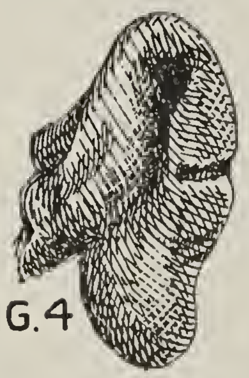
FIG. 4

The wire loop was thrown over the growth, but, unfortunately, it gave way at the eyelet, and partly constricted the growth, which had to be jerked away from its attachment, with scarcely any loss of blood. The respiration at once became natural. The point of implantation was then distinctly found in the left side at the middle part of the posterior pillar of the soft palate, covering a surface of the size of a split pea. The avulsion of the pedicle was almost flush with the surrounding parts. In order to satisfy some of my assistants, whose contention was that this raw surface might have been the result of some trauma caused by the loosened wire of the loop and my forcible evulsion of the growth, I took special pains the next day to examine under the mirror with the help of a good sunlight and of Jarvis rubber bands, passed through the nostrils and mouth and tied over the upper lip and gum. I was finally enabled to clear satisfactorily this point.

The child was subsequently seen two or three times, and finally discharged in a perfect state of health.

I will now add that when passed around to the class, without a word of comment on my part, the universal consensus was that the growth resembled an auricle.

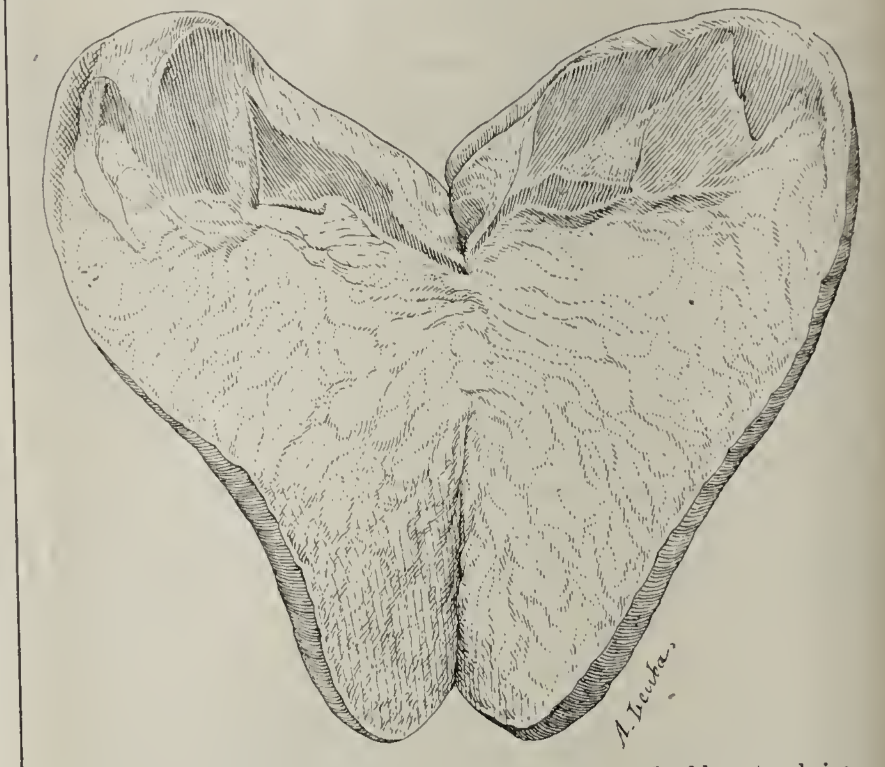

Fig. 5.—Longitudinal section of tumor, enlarged to double natural size.

The appearances presented by this tumor are indeed very remarkable, and if my researches are complete, certainly quite unique in shape from any endobuccal or pharyngeal teratoid growth so far reported in the annals of science. As you will see by the accompanying photographs and cuts, the morphology of the tumor plainly recalls the normal auricle even to its size, which is very nearly the same as the normal ears of the patient (an inch and a half by an inch). The integument is composed of ordinary cutaneous tissue, with its epidermis, corium, hairy growth, and typical follicles, sebaceous glands, cartilage, etc. All these structures present but slight changes from the normal development. The meatus only is missing.

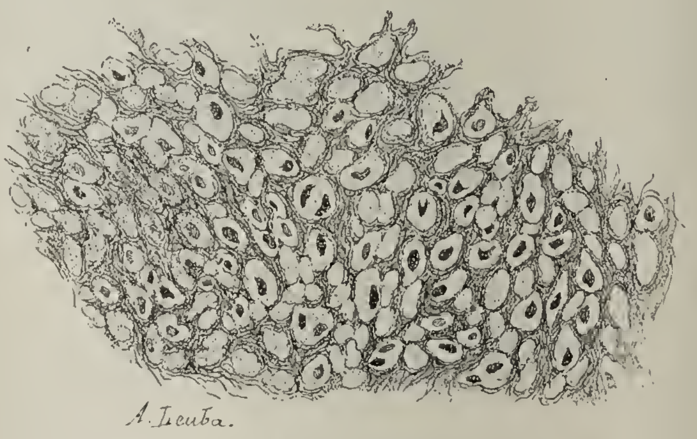

Fig. 6.—Microscopical appearance of tumor. Ocular, 1; objective, 7.

I deplore very much my inability to show you, as I had expected to do, the specimen itself, which, having been sent to my former distinguished teacher, Professor Lannelongue, of Paris, is now, unfortunately, detained in the New York Custom House.

I will, however, read the following note, which has just reached me, from the pen of Dr. Achard, who has collaborated with Professor Lannelongue in one of the most exhaustive works on congenital affections:

"I have examined in the laboratory of Professor Lannelongue the pharyngeal tumor which you kindly sent him. In order not to spoil the specimen, I have limited myself to a few 'offhanded' sections on the cut surface of the growth. The greater mass is made up of tolerably loose connective tissue and of some adipose tissue. The fibro-cartilaginous nucleus is constituted of reticulated cartilage or elastic fibro-cartilage. The tumor approaches in character the branchial fibro-chondroma observed by Mr. Lannelongue in the buccal cavity, but with this distinction that its integument is cutaneous and not mucous.

"There exists in the annals of science a small number of analogous cases. In the treatise on congenital cysts which Mr. Lannelongue and myself published in 1886 we devoted a chapter to these productions, basing our description on a few observations disseminated through the whole medical literature. Since then, Messrs. Lannelongue and Menard, in their work on *Congenital Diseases*, 1891, page 588, have found a few more cases. Finally, since that date I have heard of two or three more observations. All the tumors are covered by skin, and constituted specially by connective tissue and fat. The cartilaginous nucleus is found only in Barton H. White, Arnold, Otto, and Conitzer's cases.

"These tumors represent the simplest expression of the congenital productions known as '*epignath monsters*.'"

P. S.—Since writing the foregoing I have had occasion to show this interesting specimen to Dr. J. Bland Sutton, of London, the well-known authority on this subject, who was kind enough to furnish me, in a letter, with the following note:

". . . It is an example of dermoid tumor of the pharynx, and, though its shape corresponds to a badly formed pinna, the tumor can not in a true sense be described as a supernumerary auricle.

"Strictly, an auricle has a framework of yellow elastic cartilage, to which striped muscle fibre is attached, nd the whole covered with skin. So that from an natomical point of view the identity of this mass with n auricle fails. Dermoids of the pharynx and soft alate, like those of the rectum, appear as pedunculated kin-covered tumors, and in adults the skin is furnished vith long hair. The tumor, then, does not differ from he usual kind of pharyngeal dermoid (or teratoma of nany writers) except in the accidental resemblance it ears to a pinna."

624 Gravier Street.

The Northwestern Medical and Surgical Society of New ork.—Officers for the year have been elected as follows: resident, Dr. Charles L. Dana; vice-president, Dr. L. uncan Bulkley; treasurer, Dr. Robert H. Greene; Secetary, Dr. Joseph Collins.

NOTES ON A CASE OF GALLSTONE.

By B. S. TALMEY, M. D.

At a time when the general practitioner, as Jacobi (1) recently said, is expected to be but the city directory or the agent for the specialists in brain and nerves, in kidneys and appurtenances, in uterus and appendages, in skin and corns, in heart and lungs, in stomach, throat, nose, eyes, ears, and what not, it becomes his duty to report every case serving to show the natural tendency of the human organism to cure itself without the intervention of the scalpel. The science of medicine must surely have advanced with gigantic strides. There are but few nervous disturbances for which trephining has not been attempted, nephrectomy is praised as the only cure for a diseased kidney, and a pain or gripe in the abdomen is the signal for the immediate removal of the appendix. A multipara that has not once been delivered with the forceps is well-nigh a rarity, and the number of women deprived of their uteruses and ovaries by surgical interference for trivial causes is legion. The recently discovered name of physiological anteflexion is justification enough for operating on every retroflexion, in spite of Theilhaber (2). A stomach and a bladder have no right to existence that have not been respectively gastrophaned or cystoscoped. You can not have a headache without an empyema of the antrum frontale or antrum Highmori, and every otitis media must, of necessity, be followed by the opening of the processus mastoideus. It is, therefore, somewhat marvelous that in the present case the patient was allowed to carry a gallstone in her body for twenty years, leaving Nature to expel it.

Mrs. A. C., fifty years of age, married, had her first menstruation at the age of fifteen years. She has had three miscarriages and had given birth to one living child; bowels constipated; was always well up to twenty years ago, when she was suddenly seized with colicky pains in the right hypochondrium, which pains radiated especially toward the back. Since then the patient's face has always been somewhat jaundiced, and she has frequently suffered from headaches, lasting for twenty-four hours at a time. At times she has had pains in the back under the right shoulder blade, and occasionally vomiting. Her condition was diagnosticated as stomach disease until 1883, when she came under the treatment of a gynæcologist, who attributed her suffering to an ailment of the uterus and appendages. She remained under his care until 1887, when she was seized by a second attack of colic in the region of the liver. She was quite well up to 1889, when she experienced a third attack. From now on, they became more frequent and iregular, occurring every two to three weeks. This condition lasted for a year. The attacks were characterized by chills, fever, and sweat, followed by great prostration. From 1890 onward the periods of remissions became shorter and shorter. The fever now assumed an intermittent character, occurring every other day. The case was now diagnosticated as multiple abscesses of the liver, and she was put in bed, where she remained for nine months. A physician of note was called in consultation, and he also assured her that she was suffering from abscesses of the liver. They ordered her a rigid diet, consisting of milk, a little gruel, and beef extract. This limited diet and the continual use of morphine for the pain weakened the patient so much that, two months later, a prominent surgeon was called in, and he also confirmed the former diagnosis, but on account of the great debility refused to perform the necessary operation. After nine months the attacks somewhat subsided, and she was sent to the country, where her general condition improved. From that time until last May the attacks of colic, accompanied always by chills and fever, occurred only at intervals of three to four weeks. She still suffered from pain in the region of the liver, in spite of very large doses of morphine and rigid dieting. Last May she came under my treatment for cholelithiasis. I prescribed calomel and a mixed diet. After having taken a few powders of calomel she had a very severe attack of colic accompanied by chills and fever, which lasted for nearly fifty hours, during which time she was kept continually under the influence of morphine. A few days after the attack a large gallstone was found in her stool. The stone is egg-shaped and weighs eight grammes; it is three centimetres and a half long; one diameter is two centimetres and a quarter, the other two centimetres; circumference, six centimetres and a half. It is so soft that it can be indented by the finger nail; one half of the stone is black, the other half yellowish gray. Since that time, six months ago, she has had no other attack, and has gained twenty-eight pounds in weight. Except for the ill effects resulting from the long-continued use of morphine, she may be considered as cured.

The history of this case affords us many points of interest, but previous to analyzing it at length the ætiology of the gallstones in general must be considered.

Until recently the origin of gallstones was sought in the chemical composition of the bile. As is well known, the bile is a compound fluid, composed of glycocholic and taurocholic acids in combination with sodium; a coloring matter, biliverdin; and a fatty matter, cholesterin, which is normally held in solution by taurocholate of sodium. A precipitate of cholesterin from solution by some cause or other forms the nucleus for the production of gallstones. The question arises, What are the causes of the occurrence of cholesterin in crystalline form in the bile passages? These causes may be (1) abnormal amount of cholesterin formed; (2) insufficiency of bile salts which hold cholesterin in solution; (3) precipitation due to local causes—*e. g.*, the imperfect action of the gall bladder in expelling its contents. If bile remains in the gall bladder for some time, the quantity of cholesterin in it is constantly increased from the action of the mucous membrane. Thudicum (3) first attributed the increase of cholesterin solely to a decomposition of the glycocholic acid into glycocoll and cholalic acid. This decomposed bile has a diminished power of holding cholesterin in solution. Brockbank (4) is inclined to attribute this increase, first, to a stagnation of the bile in the gall bladder, which may be induced (*a*) by want of exercise, (*b*) by a collection of fæces in the hepatic flexure of the colon pressing on the cystic duct, (*c*) by pressure on the fundus due to tight lacing; secondly, to an increased acidity of the bile. He found that if you acidify an aqueous solution of bile salts containing cholesterin, you precipitate the latter. This is due to the fact that the salts are changed into bile acids, which are themselves scarcely soluble in water and which do not dissolve cholesterin. Naunyn (5) says the primary cause for the formation of gallstones is the stagnation of bile. This has either a direct damaging effect on the epithelium, or, by secondary infection of the stagnated secretion, a catarrh of the mucous membrane results with breaking down of epithelium. These broken-down cells furnish a large amount of albumin, which precipitates first the calcium of bilirubin and then cholesterin. That an infection often takes place is proved by finding bacteria in the interior of some gallstones and in the bile. Gallipa (6) was the first who said "*il y a des parasites dans les calculs biliaires.*" In a fatal case of biliary calculi Létienne (7) found in the bile *Bacterium coli commune*, *Staphylococcus albus*, and *Bacterium megatherium*. Dupré (8) found in three cases the *Staphylococcus albus*. Now, while there are other authors who attribute the formation of gallstones to other causes—as, *e. g.*, Odom (9), having found that in Maurepas Island, during the hot months, a large number of the female population, living in a malarial region, are regularly afflicted with gallstones, attributes the cause to malaria; and Dujardin-Beaumetz (10), who alleges angeiocholitis desquamativa to be the cause of the formation of gallstones—Naunyn's theory is now universally recognized, especially after Thudicum (11), his great opponent, in a recent treatise had modified his opinion that gallstones were originally caused by a catarrh of the mucous epithelium and glands of the bile ducts, and that during the catarrh bacteria entered the ducts from the duodenum and caused decomposition of the bile, so that the mucus in an inflammation of the gall bladder furnishes the nucleus for the collection of the solid constituents of the bile.

The cause of the icterus is yet a matter of controversy. It was formerly believed that the presence of jaundice points rather to an obstruction of the common duct by the stone; but Sticker (12), in a fatal case of severe jaundice, finding a cholesterin calculus in the neck of the gall bladder, attributes the jaundice to a tonic spasm of Lichtenstein's musculus sphincter ductus choledochi caused by irritation by the gallstone. Binne (13), finding a stone in the cystic duct, near its junction with the hepatic duct, attributes it to the pressure on the hepatic duct, and Riedel (14) believes it to be due to an extension of the inflammatory swelling of the gall bladder to the draining passages. I believe that Weaver's (15) explanation for the attacks of colic will also hold good for jaundice and the extensive dilatation of the ducts to allow even the passage of very large stones. It is well known that the specific gravity of ordinary cholesterin and pigment stones is scarcely higher than that of water, thus less than that of the bile, which is about 1.026 to 1.032. The stone, consequently, is floating toward the outlet. It thus plugs the duct, the bile accumulating behind it, so that the gallstone can fall back from the opening, allowing the bile to flow past into the intestines. As the bile flows onward it allows the walls of the dilated duct to come in contact with the rough stone, and in that way sets up a spasmodic contraction, which brings on the attack of pain and jaundice. By repeated action it is thus possible for the ducts to be extremely dilated and allow the passage of very large stones, as in our case.

The finding of large stones far up in the biliary ducts proves the correctness of the assertion that even the majority of the larger stones find their way through the ducts and do not perforate the walls. Thus, in Root's (16) case the stone, two inches long, was found at the junction of the cystic and hepatic ducts, the latter of which was found to be larger than the gall bladder, and in Binne's (17) case the stone was found in the cystic duct near its junction with the hepatic duct. Kraus (18) found gallstones even farther advanced. In a woman seventy-three years of age he found two dozen calculi, each of the size of a bean, which dilated the diverticulum Vateri; in another case he found in the pars duodenalis choledochi a stone of the size of a pigeon's egg.

When the stones have dilated the last obstacle, the musculus sphincter choledochi, they pass into the intestine and are evacuated with the fæces. Thus, Kraus (18) found in two cases stones five centimetres and four centimetres in circumference respectively, Garnier (19) one four centimetres in diameter in an old man sixty years of age, Williams (20) one measuring 4.4 centimetres by three centimetres, circumference 9.5 centimetres, and Chadwick (21), in a case of jaundice of six years' duration, one weighing four grammes.

That the stone may sometimes take another way than the natural one shows, among others, the case reported by Bull (22), where, near the apex of the gall bladder, a gallstone lay half extruded through an opening in its walls.

In my case, too, the stone could have taken the last-named course and would have caused a fatal peritonitis. An operation was, therefore, indicated. Though Riedel (23) is of the opinion that we should only operate in cases of colic without jaundice, others, like Robson (24), maintain that an indication exists where repeated attacks of biliary colic, not yielding to medical treatment, are wearing out the patient's strength. In my own case the surgeon would surely have operated, had he not been deceived by the fever, probably due to the absorption of poisonous material, in making a diagnosis of abscess.

Apart from the intermittent fever, the diagnosis gallstone is not always an easy one. Carter (25) describes three cases in which mistakes occurred; in the first, malignant disease was taken for a calculus, and in the two other, the converse. Ralfe (26) also reports a case of a woman on whom cholecystotomy was performed, but no stone was found. The autopsy soon afterward showed the presence of a malignant infiltration round the pylorus.

In my case the mistake in diagnosis was mostly due to the presence of fever of an intermittent character. Though abscesses of the liver may sometimes be caused by gallstones, as in Leyden's (27) case, where both were found, in my case a similar possibility can be excluded. It would be beyond our understanding how the patient's abscesses in the liver had been cured simultaneously with the evacuation of the stone.

Besides, the intermittent fever can be easily explained without any pyæmic process. Thus Charcot (28) distinguished two kinds of fever in liver diseases, "*fièvre hépatalgique*," which accompanies colic, and a "*fièvre intermittente hépatique*," which accompanies the obstruction of the ductus choledochus. Cyr (29), in his treatise on *The Causes of Error in the Diagnosis of the Gallstone Disease*, counts, among others, the appearance of attacks of colic in the course of a continuous intermittent fever, simulating the presence of typhoid fever, or pyæmia. Really, this occurrence is not very rare. Robowicz (30) proves by the history of four cases the presence of intermittent fever, and calls it pseudo-intermittent fever. The case of Root (31) was also characterized by a fever at irregular intervals.

The intermittent fever in our case was the cause that a treatment was instigated just the reverse of what was really required. According to Naunyn (32), a mixed diet is the best cholagogue we have. Our patient, on the other hand, was put on an almost starvation regimen. The administration of morphine was also distinctly contraindicated. Sticker (33) is of the opinion that opium, when administered to suppress the attack of colic, just previous to the expulsion of the calculus, prevents the desired end, and is the cause of renewed attacks in the future. It is a drug that diminishes the amount of bile secreted and inhibits the action of the muscles of the gall bladder. Ralfe (34) says that if given in large doses, opium sometimes stops for a time the expulsive action, and the patient is subjected to other attacks, while small doses have no decided effect. Therefore, the best we can do in biliary disease is to administer calomel, as recommended by Saccharin (35). If the pain should be intolerable, twenty to thirty drops of sulphuric ether should be given, as recommended by Carter (36). This not only diminishes the pain, but also apparently prevents future attacks from recurring so often, and thus is far superior to opium and its derivatives.

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232 East Seventy-eighth Street.

REPORT OF A CASE OF
ACUTE PURULENT OTITIS MEDIA
COMPLICATED BY RETROPHARYNGEAL ABSCESS.

By FRANK L. STILLMAN, M. D.,
COLUMBUS, OHIO.

This case is thought worthy of report on account of the rather unique series of complications, the happy subsidence of ominous symptoms, the perfect recovery, and because detailed histories of cases of acute purulent otitis media with this complication are rather uncommon in medical literature.

The subject of the sketch is an attorney, aged about forty, and unmarried. He is of a nervous, sanguine temperament, and never suffered from much illness. For some years he has had a moderate amount of chronic otitis media (catarrhal) which was aggravated, if not induced, by a deviated nasal sæptum. In February, 1896, he fell through an opening in a stable loft, and was unconscious from the resulting concussion for several hours.

The evening before his first visit he was assisting in the work of initiating candidates into a quasi-secret club. After spending the evening in this convivial manner he came home on his bicycle about twelve, midnight. The air was damp, a cold wind was blowing, and when he reached his apartments he felt thoroughly chilled. At 1 a. m. he began to have pain in the left ear, which was severe enough to keep him awake the balance of the night. Upon inspection the next morning (which was April 18, 1896), the left membrana tympani was found highly hyperæmic and bulged, and he complained of a deep pain in the ear. Paracentesis of left membrana tympani in posterior inferior quadrant under antiseptic precautions. There was an escape of considerable serum. This gave him marked relief from the pain. He was instructed to remain indoors and use Leiter's cold coil. During the next two or three days the history was that of an ordinary acute purulent otitis media. About the third day the serous discharge was assuming a purulent character. The temperature varied from 99.4° to 101.8°, and pulse about 70. On the third day the ear was cleansed with a warm solution of bicarbonate of sodium, listerine, and water. The ear was syringed with this solution every few hours, and then a light coating of boric acid was insufflated, and a strip of iodoform gauze placed lightly in the meatus.

I will state here that the nose and rhinopharynx were kept sprayed out with an antiseptic spray throughout his illness.

On the 24th the temperature was normal, the discharge was diminishing, and outside of some restlessness he was feeling first rate.

On the 27th he attended to business part of the day, but felt exhausted afterward. Used gentle politzerization at this consultation and also the usual local treatment.

May 1st.—Had rather a bad night from a dull pain in the ear.

7th.—It is noticed that discharge from ear is gradually increasing in amount, so that he finds it necessary to dress the ear and change the gauze about every three hours. After syringing the ear, a few drops of a five-per-cent. solution of nitrate of silver were dropped in the external meatus and retained a short time. The ear was then gently mopped out.

11th.—Discharge is freer. An attempt is inaugurated to carry out an entirely dry plan of treatment.

13th.—Been in room all day, suffering from hemicrania in left side of head. Has a feeling of malaise. Ear foul. Temperature 100.3°. Cleansed and purified ear thoroughly with hydrogen dioxide, 1 to 5. Politzerization and syringing with warm water. Instructions were given to have this done (with exception of the politzerization) by the nurse sufficiently often to keep the external meatus clean.

Hemicrania continued for two or three days in this manner. There were absolutely no symptoms, such as tenderness, redness, or swelling back of the ear, to indicate any mastoid involvement.

Feeling that there might be some retention of pus from insufficient drainage, a free cut was made in the membrana tympani in its posterior half, from a point back of the long process of the incus to the lower periphery. Patient had an attack of dizziness after the operation, which, however, was only momentary. Politzerization was gently used to force the pus from the middle ear into the external canal. The pain in the head seemed temporarily benefited, but the next day it was as severe as ever, the preceding night having been quite a restless and sleepless one. Upon a friend's (?) advice he dropped some spirits of camphor in the ear. This, of course, caused pain and aggravation of the symptoms. The writer, upon being summoned to his rooms, found him suffering from hemicrania, the pain of which seemed to focus at left side of the vertex and radiate toward the left temple. The left ear seemed a little more prominent than the right. The patient found it difficult to rotate his head, locating the stiffness in the back of the neck. The cerebral symptoms were sufficiently alarming to cause me to seek the counsel of a general surgeon, and Dr. Charles Hamilton was asked to visit him, and during much of the further progress of the case saw the patient often. In addition to trional, which the patient had taken occasionally for restlessness at night, codeine was prescribed, a quarter of a grain every hour, for the relief of the pain at the vertex. A hot bag was tried for relief of pain instead of cold, but was discontinued after a few hours, and the use of cold resumed. Has no fever.

On May 23d it was noticed that the pulse was below fifty beats a minute, at times going down as low as forty. There appeared to be a periodicity about the exacerbations of pain in the head, and quinine was prescribed, two grains every two hours.

24th, 11 A. M.—Pulse 46. Last night took one dose of codeine and two ten-grain trional powders. Mind seems a little sluggish this morning; is somewhat drowsy and quite weak; not much pain. At 4 P. M. took a little wine, and at 6 P. M. seems brighter.

25th, 10 A. M.—Pulse 46. Feels weak, and mind a little dull. Wine, half an ounce every three hours. Local and general treatment the same. Last night took one dose of codeine and two of trional. Discharge rather abundant.

The symptoms seeming rather grave, and fearing the formation of cerebral abscess, Dr. Kinsman was asked in consultation. The doctor, after a careful investigation of the history and the patient's present condition, thought there was no cerebral abscess, but the symptoms could, perhaps, be accounted for by a localized meningitis. Administered calomel and podophyllin, one dose.

26th, 9 A. M.—Pulse 58. Vomited once after taking a dose of quinine before breakfast. Flow from external meatus rather profuse. At 5.30 P. M. noticed that ear shows evidence of increase of inflammation. Covering of bony canal swollen, and membrana tympani is deep red and thickened. Says opening of jaw causes a feeling of pressure in ear. Discontinued quinine.

Thinking that his environment might be adding to his restlessness and discomfort, it was decided to remove him to a hospital, and this was done at once.

June 1st.—Pulse 70. Temperature normal. A tonic preparation of iron and the liberal use of eggnog were prescribed. Local treatment continued as before. Some increase of swelling of neck in front of sterno-mastoid and at angle of jaw.

2d.—Temperature 99° at 9 A. M. For about a week has complained of his throat being somewhat painful, especially during deglutition. There was a little swelling in the left half of the soft palate, but it was difficult to determine whether this or his swollen neck was producing the discomfort. This morning, however, attention was more especially directed to the throat, and it was seen that the left side of the palate was assuming a more brawny appearance. The redness and swelling were more marked at the junction of the faucial pillars. Temperature that evening was 101°.

3d.—Left side of throat was more swollen. Lanced it in three places—at upper portion of tonsil, in the anterior pillar, and in palate a little above junction of pillars—but no pus was found.

Directions were given for use of hot bag on neck. At this time the rhinoscopic mirror demonstrated the fact that there was some swelling in the rhinopharynx as well. This was not marked, but seemed to be below the opening of the Eustachian tube, and above and back of the posterior pillar.

5th.—As the opening in the membrana tympani was growing smaller it was again freely incised.

6th.—Pulse 70, of good quality. Is taking about eight glasses of milk daily. Eyes are brighter and complexion is better.

7th.—Took a drive this afternoon.

8th.—There seems to be a little increase of swelling in front of the tragus. Temperature, 99.7°; pulse, 72. Was restless and sleepless last night. Discharge from ear about the same. Dr. C. F. Clark saw the patient in consultation. During his visit the usual treatment was gone through with. The Politzer air bag was used to demonstrate the patency of the Eustachian tube and the opening in the drum membrane. The escaping air brought with it a gush of pus from the external meatus—probably a drachm in amount. The patient looked up in a startled manner and said it felt as if something broke in his head. The pus was thinner and lighter in color than usual. The pressure of the air had caused the liberation of some pent-up pus, but the exact location of the barrier to its free exit, until then existing, could only be surmised; nevertheless, the direct communication between the swelling in the throat and the ear could readily be demonstrated, for when a finger was placed in the rhinopharynx and pressure made on the left lateral wall, pus immediately exuded from the ear.

10th.—An attempt was made to evacuate the retropharyngeal abscess with an aspirating needle. It was run through the soft palate into the pharynx in two places. At that time pus was not encountered, but the next morning the up-tip of an atomizer was forcibly pressed into the lateral wall of the rhinopharynx, the wall of the abscess was ruptured, and a profuse flow of pus took place.

12th.—Could get no pus from throat by pressure. Discharge from ear has much decreased in amount.

16th.—Left tonsil is enlarging. The neck in region of angle of jaw is still swollen.

17th.—Temperature this evening 100°. Left tonsil is considerably enlarged and is softening. Steam inhalations were ordered.

18th.—Abscess in tonsil opened spontaneously. The opening was at the upper portion of the gland. A probe could be passed two centimetres in a downward direction. Using a Eustachian catheter as a guide, the internal wall of the abscess cavity was freely laid open with a bistoury. After this the patient improved quite rapidly and soon left the hospital.

30th.—A hard swelling remains in neck at angle of jaw. It began to soften about the 4th or 5th of July and a poultice was ordered. By the 10th fluctuation could be felt, and on the 13th it was opened and gave exit to a couple of ounces of pus. After that the progress toward recovery was quite rapid.

The last time he was examined by the writer was on August 28th, upon the patient's return from a month's outing. There was no aural discharge and the drum membrane had healed perfectly.

In taking a retrospect of this case several queries naturally arise in one's mind. 1. Is it not probable that the ominous symptoms which were referred to the brain were caused by the formation or retention of pus between the middle ear and pharynx? 2. By what route did the pus gain access to the rhinopharynx? In the writer's opinion the route was probably along the sheath of the tensor tympani muscle.

118 East Broad Street.

ON WIDAL'S METHOD OF DIAGNOSTICATING TYPHOID BY MEANS OF BLOOD SERUM.

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Historical.—In May, 1894, Pfeiffer, of Berlin, discovered that if the serum of an animal previously rendered immune to the action of the cholera vibrio be added to a fresh culture of the same organism in bouillon, and injected into the peritoneal cavity of guinea-pigs, the cholera organisms soon perished. He found that this "immunity reaction," as he termed it, could only be obtained in the case of cholera by using the blood serum of an animal rendered immune to that disease, and that other species of bacteria were entirely uninfluenced by such blood serum.

In November of the same year he applied the same test in differentiating doubtful typhoid cultures, and found that, using now, of course, the serum of an animal rendered immune to typhoid, he obtained analogous results.

Stein was the first to investigate the immunizing power of serum obtained from convalescent typhoid patients upon animals, finding that in the majority of cases such blood serum had the power of rendering an animal immune to injections of typhoid bacilli.

Pfeiffer (1), in following up this line of work, discovered his "specific immunity reaction."

In a recent contribution, describing a series of experiments upon this reaction, he and Kolle found that animals could be rendered immune with increasing injections of living typhoid cultures, there being developed in the blood of the animals a specific bactericide body similar to that which exists in the blood of convalescent typhoid patients. Serum from animals so immunized, when added to cultures of typhoid bacilli, cause a rapid disappearance of the bacilli, while cultures of other organisms are not affected.

In 1895 Gruber showed that the "specific immunity reaction" of the typhoid bacillus could be demonstrated in a test tube, it not being necessary to infect a guinea-pig. If a few drops of blood from a patient with, or convalescent from, typhoid fever, or the blood serum of an immunized animal be added to a bouillon culture of the typhoid germ, the bacilli are soon seen to become motionless and form small flocculent clumps, which finally sink to the bottom of the culture tube, leaving the supernatant liquid clear. Gruber used this method in distinguishing between the cultures of typhoid and other organisms, the change described taking place if the culture were typhoid, no change being observed with other organisms.

Widal (2), a French investigator, was the first to use this "immunity reaction" in diagnosticating cases of typhoid, and his methods will be described later. He concluded from his experiments that by the methods described by him typhoid fever could be unerringly diagnosticated during the later weeks of the disease, and subsequent observations have confirmed his statements.

To Johnston (3), of Montreal, however, we are indebted for a method which renders the test one easily carried out in public laboratories and in the private office. He found that dried blood, even though kept several days, when moistened with a little water and added to the prepared culture, produced the same result as fresh blood serum. That this is true has been proved by a large number of observations, and the health departments of various cities have already notified physicians that they are prepared to make the serum diagnosis of typhoid from blood dried upon slips of paper or mica, should they so desire. Much of interest as to the value of the method and its application may be expected when reports are issued from these various city laboratories.

According to Johnston's method of applying the test, all that is needed is a good microscope with one-fifth to one-eighth-inch objectives, a pure bouillon or agar culture of the typhoid bacillus, some cover glasses and slips, a platinum-wire loop, and a drop of dried blood from the case to be examined. With this simple outfit, combined with the necessary knowledge of bacteriological technics, it is safe to say that in the vast majority of cases typhoid fever may be accurately diagnosticated as early as the end of the first week.

That this is of immense value to the clinician goes without saying, and if the method is as successful as at present it seems to be, we may look for valuable results, especially in the differentiation of the numerous continued fevers.

Methods of Application of the Test.—The test, as at first applied by Widal, was as follows: Blood was drawn from a vein in the forearm with a syringe, the serum decanted, and mixed with ten to fifteen times its volume of a fresh bouillon culture of typhoid bacilli. This was left in the thermostat, at 37° C., for twenty-four hours. Later in his work, however, he found that as good results could be obtained by the use of a few drops of blood from the ear or finger of the patient. A drop of the serum of this blood was added to ten to fifteen drops of the bouillon culture, and a drop of the mixture examined at once between a slide and cover glass with a one-twelfth-inch immersion objective. If the case was one of typhoid, the bacilli were seen to lose their motility and clump together in from two to sixty minutes. He found this reaction present in no other disease. The modification of the test by Wyatt Johnston consists in using dried instead of fresh blood, thus making the transportation of specimens of blood from suspicious cases possible. Widal (4) had noticed that dried serum and blood gave the reaction, but Johnston was the first to make practical application of the fact. He found that blood dried for from two to four weeks still gave the reaction. He describes his method as follows (3): "I use a dry lens of about one-fourth-inch focal distance. The dry blood drop is partly dissolved in germ-free water, and a drop of the solution obtained is placed upon a cover glass which has just been passed through a flame and mixed with a drop of a typhoid bouillon. This is placed over a hollow cell sealed by vaseline. Uniformity of temperature is the chief detail to be attended to, as the agglutination does not take place so well if the movements are sluggish. A hot-water dish filled with warm water forms a cheap and convenient substitute for an incubator, and a simple warm stage made of a sheet of copper is also useful. In a well-warmed laboratory, however, the use of these adjuncts is unnecessary."

Where the reaction is doubtful he advises watching of the preparations for some hours, or even a day or two, when an increase of motion is noted in non-typhoid cases, and a more perfect agglutination in genuine ones.

The author has used the following method with entire satisfaction: Upon a well-warmed glass slide, as used in microscopic work, place a small drop of distilled water. With the platinum needle take a very minute portion of a typhoid culture on agar and mix thoroughly with the distilled water upon the slide. Now moisten the dried blood drop and add a small portion to the drop of culture upon the slide and cover gently with a cover glass, being careful not to press it forcibly down upon the preparation. Examine with a one-fifth to one-eighth-inch dry objective.

I have found the one-eighth-inch dry objective most satisfactory in this work, and believe that the use of an immersion lens would tend to falsify the microscopic picture unless a very shallow cell were used.

It will also be noticed that I speak of an agar culture of the bacillus instead of bouillon. I have used the agar culture with entire satisfaction, and prefer it simply because it is in a solid medium and easier to handle. The only thing to be observed in using it is to be careful and take a very minute portion of the growth upon the needle in transferring it to the water on the slide.

Upon watching such a prepared specimen, supposing that typhoid is not present, the bacilli are seen to be in active motion, darting here and there over the field, and nowhere joined together in any number. Often two will be seen to be attached, but groups of them are not to be seen.

On the other hand, if the blood has come from a typhoid patient, in the course of from five to fifteen minutes if the disease be well advanced—longer, if earlier in the disease—the bacilli will be seen to become sluggish in their movements, gradually collect in small groups, and finally become agglutinated in clumps containing numerous bacilli, all movement having ceased. The serum of the first week of convalescence is said to produce the most marked reaction. In some cases the reaction takes place very slowly, while in others the bacilli will be seen to group and lose their motility almost as soon as the blood is added to the prepared culture.

Value of the Test.—It is of great interest to review the results of the application of the test, as furnishing us valuable information regarding its diagnostic value.

The results, as so far published, show that it is invariably negative with diseases other than typhoid.

Widal (5) has tried it with the blood from the following diseases, with negative results: Acute and chronic nephritis, tuberculosis, pleurisy with effusion, pneumonia, catarrhal jaundice, cirrhosis of the liver, and acute rheumatism.

Green (6) and Ritchie (7) have applied the test in the following diseases: Ulcerative endocarditis, bronchopneumonia, lobar pneumonia, pyloric stenosis, septicæmia, diphtheria, gonorrhœal bubo, phthisis, tuberculous pleurisy, erysipelas, abortion, alveolar abscess, and gastro-enteritis. In none of these was there any reaction, and, in fact, there has been no case reported of a reaction occurring with any disease but typhoid.

	Disease.	Stage.	Result.
1	Typhoid..............	Twenty-fourth day.	Reaction present.
2	“	Fortieth day.	“ “
3	“	Forty-sixth day.	“ marked.
4	“	Sixteenth day.	“ “
5	“	Twenty-fourth day.	“ present.
6	“	Twenty-eighth day.	“ marked.
7	“	Thirtieth day.	“ “
8	“	Twentieth day.	“ present.
9	“	Sixtieth day.	“ “
10	“	Thirty-eighth day.	“ marked.
11	“	Twenty-seventh day.	“ “
12	“	Fourth day.	“ present.
13	“	Seventh day.	“ marked.
14	“	Tenth day.	“ present.
15	“	Relapse second week.	“ marked.
16	“	Second week.	“ “
17	“	Twenty-fourth day.	“ present.
18	“	Fortieth day.	“ “
19	“	Forty-sixth day.	“ marked.
20	“	Sixteenth day.	“ present.
21	“	Twenty-fourth day.	“ “
22	“	Twenty-eighth day.	“ marked.
23	“	Thirtieth day.	“ “
24	“	Twentieth day.	“ present.
25	“	Sixtieth day.	“ “
26	“	Thirty-eighth day.	“ “
27	“	Twenty-first day.	“ marked.

Regarding the action of the test with normal blood, it has been found that a reaction never occurs.

Concerning its reaction with typhoid, the following statistics are so far obtainable:

Widal (5) invariably obtained a reaction in typhoid fever, and even in very late convalescence.

Green (6) and Ritchie (7) give the list of cases shown in the preceding table.

In this table it will be seen that in one instance the reaction occurred as early as the fourth day, and Green believes that if it is not present on the seventh or eighth day of fever, typhoid fever is not the disease present.

At the Boston City Hospital (8) the test has been made in fifty cases of undoubted typhoid, of doubtful typhoid, and some other diseases, and in all the response "has accorded with the diagnosis as previously made, or reached later with a clearer view of the conditions."

Park (9) states that of thirty-four cases of typhoid examined at the New York Health Department Laboratory, thirty-three showed the characteristic clumping. In the case which failed to give it the patient had been convalescent for forty days. He concludes: "If there is no specific reaction in a case sick over a week the diagnosis of typhoid fever may be excluded. If a marked reaction occur, then, unless the patient has had an attack of typhoid fever within at farthest ten years, the case is typhoid fever."

C. J. Bartlett (10) gives the following details of his examinations: "Samples of blood have been collected from thirty persons. Of these, twelve were from patients sick with, or convalescent from, typhoid fever, according to the clinical diagnosis; one from a person who had had the disease one year before; thirteen from those sick with various other diseases, and the other four, normal blood. None of the blood smears of these last two groups gave the characteristic reaction when added to a motile culture of the typhoid bacillus, nor did that taken one year after the disease, though observed for an hour. Of the twelve typhoid cases, ten gave the characteristic reaction readily." One of the two which did not give it was in a girl six years old; the course of the disease has been mild, and the blood was taken after two or more weeks of normal temperature; the other was a case in which the exact duration of the disease was unsettled, the blood being taken on the fifth day of confinement to bed. In closing his article, Bartlett says: "Excluding these last two, which can hardly be considered as fair tests, this method of diagnosis gave the same satisfactory results claimed for it by all who have made use of it thus far.

My own experience with this method of diagnosis has been rather limited, but still may be of interest. My experiments may be divided into three classes—*i. e.*, with normal blood, with the blood of various diseases, and with blood from typhoid cases.

With Normal Blood.—Six specimens of normal blood have been tested by this method, none of them showing the least reaction.

With Blood from Various Diseases.—The following cases of disease were examined: *

CASE I.—Chronic Bright's disease. No reaction with Widal's test.
CASE II.—Pneumonia, lobular. No reaction.
CASE III.—Paralysis. No reaction.
CASE IV.—Varicose ulcers. No reaction.
CASE V.—Abscess of liver. No reaction.
CASE VI.—Acute amygdalitis. No reaction.
CASE VII.—Neurasthenia. No reaction.
CASE VIII.—Tuberculosis. No reaction.
CASE IX.—Fracture. No reaction.
CASE X.—Arthritis deformans. No reaction.
CASE XI.—Chronic laryngitis. No reaction.
CASE XII.—Syphilis. No reaction.

As will be seen, in none of the above diseases was there the slightest reaction to the test, although the preparations were placed under the most favorable circumstances and watched for long periods of time.

I have had opportunity of applying the test in a comparatively small number of typhoid cases so far, but hope soon to be able to report upon a larger number. Those examined were:

No. 1. Typhoid—severe relapse. Tested by Widal's method, showed reaction in two minutes, which became very marked in twenty minutes.

No. 2. Typhoid—convalescent. Marked reaction.

No. 3. Typhoid—twentieth day. Reaction present.

No. 4. Typhoid—eighth day. Marked reaction.

No. 5. Typhoid. Reaction present.

No. 6. Doubtful. No reaction. Pneumonia developed.

No. 7. Typhoid—end of second week. Marked reaction.

No. 8. Typhoid—end of fifth day. Marked reaction.

No. 9. Typhoid—third day. Slight reaction. In this case there has since developed a mild continuous fever.

In all of these cases the reaction was very distinct, the bacilli losing their motility and clumping in from five to twenty-five minutes. In the case of No. 1 and No. 2, the diagnosis had previously been ascertained by the author, by culture of the typhoid germ, obtained from the stools, upon Elsner's medium. It does not seem probable, supposing the action of the blood upon the bacilli to be due to a bactericide developed in the blood serum which is antagonistic to the germs, that the reaction would be present much before the end of the first week of the disease, and it seems to me that it would be unsafe to say that typhoid was not present, in some instances of mild infection, from an examination made prior to the close of the second week. Where the infection is severe, it is reasonable to suppose that the reaction of the infected organism will be more rapid, and we will get an immunity reaction more quickly than in a very mild infection, for which reason it would be well to study each case to be examined individually, and make allowances for unknown (at present) factors which might interfere with the test in certain cases. From my own slight experience with the method, and from the published reports of others, I believe that we have in Widal's test a most valuable and easily applied method of diagnosticating typhoid fever at an early stage of the disease. In closing, I wish to express my thanks to those of my colleagues who have so kindly aided me in my experiments.

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* I am under obligations to Dr. C. P. Bennett, Dr. Siratton, Dr. Barron, and Dr. Brownlee for material for these tests.

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A LESSON TAUGHT BY A GASTROSTOMY ACCORDING TO THE SSABANEJEW-FRANK METHOD.

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On reading Dr. Willy Meyer's excellent article on Gastrostomy according to Kader's Method, in a recent number of the *New York Medical Journal*, I am reminded of an experience of my own in direct line with the author's observation of the case operated after the Ssabanejew-Frank method in which only a short cone of the anterior wall of the stomach could be raised, and in which immediate leakage followed.

My patient was a man of fifty-two years, who came under my observation at the Arapahoe County Hospital in May of the present year. Difficult deglutition had extended over a period of fifteen months. During the last five weeks he had been able to swallow only liquids, and for some ten days nothing had entered the stomach. He was markedly emaciated, but the pulse was of good force and quality, 80 a minute, and his general strength seemed preserved to an extent quite out of proportion to the emaciation. Gentle attempts with esophageal bougies revealed an impassable stricture at leven inches. Instrumentation was followed by a little ozing of blood.

The slight chances offered by gastrostomy were explained to the patient and he desired the operation. The steps laid down by Ssabanejew and Frank were accurately followed, but the stomach had so contracted that its wall was much thicker than I had expected, and it was difficult to bring up a cone sufficiently long to xtend from the first or peritoneal incision to the second or skin incision, which latter was laid something over an inch above the free border of the costal cartilage. When I had finished the operation there was considerable traction, both at the junction of the stomach with the parietal peritonæum and at the apex of the cone where the stomach was opened. Twenty-four hours later I looked at the wound and was somewhat surprised to find that the traction of the stomach had dragged down the upper incision so that it lay at the free border of the costal cartilage. The tube passed backward and a little downward into the stomach, thus rendering negative the proposed valvelike closure of the fistula.

The patient, who was not a really favorable subject, died of exhaustion at the end of forty-eight hours. An autopsy by Dr. E. R. Axtell showed that the junction of the stomach with the parietal peritonæum was completely sealed. There was a large cancerous mass almost completely occluding the œsophagus twelve inches below the dental arcade.

In this case I found, first, that the drawing up of the cone of the stomach was by no means so easy as I had expected; second, that this cone was very much larger and thicker than I had expected; and third, that while the second incision was laid as far above the free border of the costal cartilage as is directed by the authors, the traction of the stomach was sufficiently great in the emaciated condition of the patient to draw down the upper incision and tend to place it opposite the peritoneal opening, thus rendering impossible of accomplishment the special object of the operation itself.

Therapeutical Notes.

An Application for Herpes Præputialis.—The *Indépendance médicale* credits Gaucher with this formula:

℞ Powdered alum,
Powdered starch, } each....... equal parts.
M. S.: To be dusted on twice a day.

An Ointment for Seborrhœa of the Scalp.—The *Indépendance médicale* credits Hartzelle with the following formula:

℞ Resorcin...................... 1 part;
Alcohol...................... 50 parts;
Vaseline..................... 150 "
M. This is to be rubbed into the scalp at bedtime. After improvement is shown, the ointment need not be used oftener than once in two or three months.

For the Vomiting of Gastric Cancer.—Dr. A. Robin (*Gazette hebdomadaire de médecine et de chirurgie*, January 10, 1897) recommends the following formula:

℞ Picrotoxin,
Morphine hydrochloride, } each. 3 grains;
Neutral atropine sulphate...... $\frac{6}{10}$ of a grain;
Cherry-laurel water............ 600 grains.
M. From five to eight drops five or ten minutes before the principal meals.

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THE PROPOSED CONFEDERATION OF REPRESENTATIVES OF STATE SOCIETIES.

IN his presidential address, delivered before the Medical Society of the State of New York last week, Dr. Spencer made a proposal that is worthy of serious consideration, that of an annual meeting, in Washington, during the session of Congress, of a body composed of representatives of the various State medical societies, or, as the report has it, of the committees on legislation of these societies. We understand that, in accordance with Dr. Spencer's recommendation, the Medical Society of the State of New York has provided for a deputation of ten of its members to represent it in such a body, and we learn also that correspondence with prominent members of other State medical societies justifies the inference that those societies are willing to take part in the movement.

We take it that the main function of such a body would be one of conference with a view to substantial unity of action in endeavors to promote national and State legislation on matters pertaining to the medical profession and to prevent legislation calculated to cripple the profession. It seems to us, therefore, that it would be better to choose the representatives from the State society committees on legislation rather than from the members at large, for the members of those committees ought to be well informed as to the nature and probable results of proposed enactments than physicians in general are.

It seems clear that an annual conference of the kind that Dr. Spencer has in view may be able to accomplish much good and ward off no little evil. At least it would be the means of such a communication of sentiment as would serve the purpose of making plain to the profession in each State the wishes of physicians in other States on matters that would properly fall within the field of the conference's work, together with the considerations on which those wishes might be founded.

The scheme broached by Dr. Spencer seems, for such reasons as those we have mentioned and for others, one deserving of advocacy and adoption. Put into execution, it would touch closely upon matters of public sanitation, of medical education, and of the repression of quackery, all of which are continually in need of having cast on them the light of professional opinion from various quarters.

THE ACADEMY OF MEDICINE'S SEMICENTENNIAL.

THE exercises held in Carnegie Hall on Friday evening of last week, as well as the reception afterward in the academy's own building, had all the impressiveness that was expected, and it is safe to say that the non-medical part of the companies was very much interested. All the speakers announced, with one exception, were on hand and performed their allotted parts creditably. In addition to those announced, Dr. Purple was present and made an appropriate speech. The President of the United States was particularly felicitous in his address, which exemplified his wisdom and good taste. The great hall was comfortably filled, and we think everybody was seated to advantage. The various committees had done their work well. It is seldom, unfortunately, that this can be said of an affair of the sort.

It is well for a body of men devoted to the pursuit of science to thus put itself before the general public at times, so that the people may learn that its cultivation of its particular subject has a bearing upon their welfare, as in this instance they might learn that the academy was concerned with something besides morbid specimens, microbes, diagnostic means, and surgical procedures, and interested itself actively in household and municipal sanitation. The academy is respected in this community, and such celebrations as the one of which we are writing have a decided tendency to enhance the people's respect for it.

The academy has before it an opportunity for still greater usefulness than it has thus far displayed, and we are confident that it will make the most of it. To do so, it will require at times great self-restraint and at all times vigilance against cliquism within its own body and machinations without. The weight of its growing influence must never be cast for or against any scheme at the behest of plotters or by their designing, and we firmly believe that it never will be. The academy, we feel sure will continue to stand as a solid rock in opposition to al that is detrimental to the public interests.

MINOR PARAGRAPHS.

MEDICAL AND CLERICAL ETHICS.

THE Rev. Dr. Lyman Abbott has administered a jus rebuke to his blatant critics in this remark: "I thin the counsel given by Dr. John Watson (Ian Maclaren to the students at Yale is wise counsel: 'Ministe might very well copy the etiquette of the medical pr fession, which is distinguished by the respect its members show to one another. No minister should criticise another minister in public.' " The common slur on the medical profession in the cry that "doctors always stand by one another"—popularly interpreted to mean that they uphold one another against truth and reason—meets with its antidote in this wise admonition of the Scotch divine's. There is too much ill-natured and ill-mannered criticism in the newspapers and in common talk. Medical ethics has been made an idol, on the one hand, and it has been wantonly demolished, or sought to be demolished, on the other hand. The one extreme is as bad as the other, and both are infinitely bad.

THE CRAIG COLONY AS AN EXAMPLE.

It is gratifying to observe that the work done in the Craig Colony for Epileptics is already being held up abroad as worthy of imitation. The example of New York State, says the *Lancet*, might well be copied by the English poor-law authorities, and the epileptic colonies now in existence be taken in hand and generously supported. Excellent work, our contemporary adds, is being done at Chalfont and other institutions in England, but for want of funds comparatively few colonists can yet be accommodated, and much outlay is still required before suitable employment can be found for all in summer and winter.

ITEMS.

Infectious Diseases in New York.—We are indebted to he Sanitary Bureau of the Health Department for the ollowing statement of cases and deaths reported during he two weeks ending February 2, 1897 :

DISEASES.	Week ending Jan. 26.		Week ending Feb. 2.	
	Cases.	Deaths.	Cases.	Deaths.
yphoid fever..................	7	3	4	0
carlet fever..................	176	9	138	7
erebro-spinal meningitis....	4	3	1	1
easles....................	154	8	165	2
iphtheria..................	295	38	228	31
roup....................	7	3	20	12
uberculosis..................	159	99	176	139

The New York Academy of Medicine.—At the last stated eeting, on Thursday evening, the 4th inst., the order for e evening was as follows : A valedictory address by the tiring president, Dr. Joseph D. Bryant, and an inaugural ldress by the new president, Dr. Edward G. Janeway. A rtrait of Dr. J. W. Schmidt was to be presented by Dr. muel S. Purple, and one of Dr. Alfred L. Loomis was be presented by Dr. William M. Polk.

At the next meeting of the Section in General Surgery, Monday evening, the 8th inst., the following papers ill be read: Fracture of the Neck of the Femur in Child-od, by Dr. Royal Whitman; and Operative Surgery at e City Hospital, with a Completed Report on the Study Wound Infection, by Dr. George E. Brewer and Dr. ilip H. Hiss. There will be a presentation of patients.

At the next meeting of the Section in Genito-urinary rgery, on Tuesday evening, the 9th inst., Dr. Robert W. ylor will read a paper on Fibroid Sclerosis of the Cor-ra Cavernosa, which is to be discussed by Dr. L. Bolton ngs, Dr. Samuel Alexander, and others. Dr. Ferd. C. entine will give an exhibition of Kollmann's urethral ator and of his urethroscopic tube. Patients will be sented and cases reported.

At the next meeting of the Section in Pædiatrics, on ursday evening, the 11th inst., Dr. L. Bolton Bangs will read a paper on Stricture of the Urethra in Male Children, which is to be discussed by Dr. Robert H. Greene, Dr. Robert Abbe, and others. Dr. Henry Ling Taylor will give an exhibition of skiagraphs showing congenital absence of the radius (bilateral).

At a special meeting of the Section in Neurology, on Thursday evening, the 11th inst., Dr. Philip Coombs Knapp, of Boston, will read a paper on Traumatic Neurasthenia and Hysteria, which is to be discussed by Dr. M. Allen Starr, Dr. Landon Carter Gray, Dr. Charles L. Dana, Dr. G. M. Hammond, Dr. B. Sachs, Dr. Frederick Peterson, Dr. J. Arthur Booth, Dr. Allan McLane Hamilton, and prominent members of the New York bar.

The German Medical Society of the City of New York.—At the last meeting, held in the Academy of Medicine on Monday evening, February 1st, Dr. A. Herzfeld was to present a case of pseudoleucæmia; Dr. Louis Fischer was to demonstrate a case of onanism in a child ten months old; Dr. Max Toeplitz was to show two patients in whom chronic otitis media had been cured by radical opening of the middle-ear spaces; Dr. L. Weber was to demonstrate a preparation of bilateral renal calculi, and give a history of the case; there was to be a discussion of Dr. A. Jacobi's paper on The Complications of Rhachitis; Dr. Max Einhorn was to read a paper on Constipation and Diarrhœa as the Consequences of Various Gastric Affections; and Dr. S. Baruch was to read one on Defects in Hydrotherapeutics, to be discussed by Dr. I. Adler, Dr. L. Weber, Dr. J. Fränkel, and others.

St. Louis Medical Society.—At the last meeting, on Saturday evening, January 30th, the programme was as follows: A paper by Dr. I. N. Love entitled A Few Points regarding the Education of Girls from the Standpoint of a Doctor, which was to be discussed by Dr. W. G. Moore, Dr. Y. H. Bond, Dr. J. K. Bauduy, Dr. W. M. McPheeters, Dr. F. R. Fry, Dr. J. Y. Brown, Dr. B. M. Hypes, Dr. Henry Hickman, Dr. R. Funkhouser, and Dr. F. A. Glasgow. Dr. L. H. Laidley was to present a patient with Raynaud's disease.

The Tri-State Medical Society of Iowa, Illinois, and Missouri.—The secretary, Dr. G. W. Cale, announces that the fifth annual meeting will be held in St. Louis, on April 6th, 7th, and 8th. A large number of valuable papers will be read. Dr. Joseph Price, of Philadelphia, will hold the surgical clinic, Dr. James T. Whittaker, of Cincinnati, the medical clinic, and Dr. Dudley Reynolds the ophthalmic clinic.

The Buffalo Academy of Medicine.—At the regular meeting of the Section in Surgery, on Tuesday evening, the 2d inst., the programme included the following papers: The Results of 350 Operative Cases of Inguinal Hernia in the Male, by Dr. William B. Coley, of New York, and The Use of the Galvano-cautery within the Nose and Throat, with a Demonstration, by Dr. Horace C. Clark.

The Æsculapian Society of Newark.—Dr. A. M. Phelps, of New York, addressed the society on January 29th on The Management of Clubfoot, and demonstrated his method of treatment by operating on a patient.

The Ohio State Medical Society will hold its fifty-second annual meeting in Cleveland on May 19th, 20th, and 21st, under the presidency of Dr. F. C. Larimore, of Mt. Vernon.

The New Yorker medicinische Monatsschrift.—We learn that Dr. O. Kiliani has retired from the editorship and been succeeded by Dr. Alfred Michel, also that the *Monatsschrift* has been adopted as the official journal of the German Medical Society of the City of New York.

The New York Polyclinic.—The trustees have decided to rebuild on the site of their former building, Nos. 214, 216, and 218 East Thirty-fourth Street. The work will be begun immediately.

The Manhattan Eye and Ear Hospital.—Dr. William M. Leszynsky has been appointed consulting neurologist to the hospital.

The Obstetrical Section of the New York Academy of Medicine.—Dr. S. Marx has been elected chairman, and Dr. H. L. Collyer, secretary.

The Sheppard Asylum, Towson, Maryland.—Dr. Charles M. Franklin, of Lancaster, Pennsylvania, has been elected first assistant physician.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 24 to January 30, 1897:*

Ewen, Clarence, Major and Surgeon, having served over thirty years in the army, is, on his own application, by direction of the President, retired from active service.

Owen, William O., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect about February 1st.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Two Weeks ending January 30, 1897:*

La Motte, H., Assistant Surgeon. Detached from treatment at the Naval Hospital, Philadelphia, ordered before the Retiring Board, Washington, then home, and placed on waiting orders.

Riggs, C. E., Assistant Surgeon. Detached from the San Francisco and ordered to the Detroit.

Society Meetings for the Coming Week:

Monday, *February 8th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private—anniversary); Lenox Medical and Surgical Society, New York (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private); Maine Academy of Medicine and Science.

Tuesday, *February 9th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Medical Society of the County of Rensselaer, N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

Wednesday, *February 10th:* New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City Hospital; Doctors' Club of the City of New York; Medical Societies of the Counties of Albany and Allegany (quarterly), N. Y.; Pittsfield, Massachusetts, Medical Association (private); Philadelphia County Medical Society; Franklin, Massachusetts, District Medical Society (quarterly—Greenfield).

Thursday, *February 11th:* New York Academy of Medicine (Section in Neurology); Society of Medical Jurisprudence and State Medicine, New York; New York Laryngological Society; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

Friday, *February 12th:* Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.

Saturday, *February 13th:* Obstetrical Society of Boston (private).

OBITUARY NOTES.

Richard J. Hall, M. D., whose recent death in California we recorded last week, was a son of the Rev. Dr. John Hall, of New York. He was a native of Ireland, from which country, while quite young, he emigrated with his father's family. He was graduated from Princeton University in 1875, and from the College of Physicians and Surgeons in 1878. He served on the house staff of the Roosevelt Hospital, and then went to Vienna for further study. Shortly after his return to New York he received a teaching position in the College of Physicians and Surgeons and entered upon a promising career in surgery. After a few years, however, his health became impaired and he went to Santa Barbara, where he soon became a prominent and successful practitioner. His last illness, which was brief, was due to inflammation of the vermiform appendix. An operation was performed, but it proved unsuccessful. Dr. Hall was forty-one years old at the time of his death. He was a most amiable gentleman, besides being a clever practitioner, and his loss will be felt seriously.

Births, Marriages, and Deaths.

Born.

Canfield.—In Ingersoll, Ontario, on Monday, January 11th, to Dr. and Mrs. F. D. Canfield, a daughter.

Viallon.—In Bayou Goula, Louisiana, on Wednesday, January 27th, to Dr. and Mrs. Louis H. Viallon, a daughter.

Married.

Ashley—Jones.—In Jackson, Mississippi, on Wednesday, January 27th, Dr. W. Frank Ashley, of Sidon, Mississippi, and Miss Ida Jones.

Herman—Wise.—In New York, on Wednesday, January 20th, Dr. Henry Herman and Miss Elenore B. Wise.

Hickman—Potter.—In Philadelphia, on Thursday, January 28th, Dr. Walter Atlee Hickman and Miss Blanche Van Hook Potter.

Thorn—Glaser.—In New York, on Thursday, January 28th, Mr. Adolph S. Thorn and Miss Mamie Glaser, daughter of Dr. Joseph Glaser.

Died.

Brown.—In Brighton, N. Y., on Saturday, Januar 30th, Dr. Thomas A. Brown, aged eighty-one years.

Jordan.—In Birmingham, Alabama, on Monday, Janu ary 25th, Dr. Thomas Jordan.

Lorette.—In Brooklyn, on Saturday, January 30th Dr. Francis M. Lorette, aged eighty-four years.

McNamara.—In New York, on Thursday, Januar 28th, Dr. Lawrence J. McNamara.

McParlin.—In Annapolis, Maryland, on Thursday January 28th, General Thomas A. McParlin, M. D., Unite States Army, retired.

Morrall.—In Millet, South Carolina, on Thursda January 21st, Dr. George W. Morrall.

Vaughan.—In Los Angeles, California, on Sunda January 24th, Dr. James L. Vaughan, in the seventy-sixt year of his age.

Wenzel.—In Milwaukee, on Wednesday, Januar 27th, Dr. Henry Pascal Wenzel.

Letters to the Editor.

A CARDIAC ANOMALY.

Charleston, S. C., *January 29, 1897.*

To the Editor of the New York Medical Journal:

Sir: Being unable to find mention of such an an tomical anomaly in any of the works to which I have cess, I should like to report the following: Not lo since I held an autopsy upon the body of an old negress who had died of pneumonia, and, besides the usual pathological lesions, found that the semilunar valve at the pulmonary orifice of the heart was composed of four leaflets instead of three, as is usual. A similar condition I can find no mention of, though there is, in the *Northwestern Medical and Surgical Journal* for July, 1873, mention made of a case in which this valve was found to be composed of two leaflets.

During life the action of the heart was perfect, and there was no clinical evidence of the anomaly. The specimen I presented to the anatomical museum of the South Carolina Medical College.

A. Johnston Buist, M. D.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

inety-first Annual Meeting, held in Albany on Tuesday, Wednesday, and Thursday, January 26, 27, and 28, 1897.

The President, Dr. James D. Spencer, of Watertown, in the Chair.

The President's Inaugural Address.—Dr. Spencer aid that the State board of health should be given absoute control of all sources of water supply, and should e given sufficient funds to allow of proper and sysematic inspection of cattle. Speaking of the proposed rganization to be known as the "National Federation f Committees on Legislation of State Medical Socities," he said that, as the object of this organization was secure concerted action on matters now coming before he legislative committees of the individual State soieties, it seemed desirable for this State society to be epresented in the federation. The statistics of the oard of regents showed that New York State had nearly eventeen per cent. of all the medical students in the nited States.

The Report of the State Board of Examiners.—This port showed that 86.2 per cent. of the students from edical schools in this State successfully passed the examations, and only 74.5 per cent. of those coming from hools outside of the State. Since the establishment the board, in 1893, 2,832 persons had applied for a ense to practise medicine, and of this number, 927, 29.7 per cent., had been rejected as incompetent.

Report of the Committee on Legislation.—The comittee reported through its chairman, Dr. A. Walter iter, that, notwithstanding a strong effort had been ade to secure the repeal of the law requiring the pub- -school children to be instructed in the effects of alcolics and narcotics, it had been only possible to secure favorable modification of the law. Attention was lled to a proposed bill empowering the regents of the iversity to license midwives after proper examination, d also to revoke the license for cause.

Report of the Committee on Hygiene.—After dwell- upon the large proportion of deaths from contagious, ectious, and communicable diseases, and the need for vances in the knowledge of hygiene, the committee ommended that the society should endeavor to secure establishment, in connection with the county socies, of local organizations whose special duty it should be to promote the study of hygiene and report to the State society.

Preliminary Education.—Dr. Daniel Lewis moved that the committee on legislation be requested to present to the legislature an amendment to the present medical law, by which a medical student graduating from a literary college should be credited with the last year of study in such college.

Dr. D. B. St. John Roosa indorsed this resolution, and said that in our zeal in this matter we had exceeded even the requirements in Germany, so that a student now could hardly expect to enter upon medical practice before he was thirty-one years of age, if he desired a liberal education and a medical training. The resolution was adopted.

A Geography and Arithmetic Lesson on Blindness in New York State.—Dr. Lucien Howe, of Buffalo, in a paper with this title, called attention to the fact that twenty-one per cent. of all the blind children in the two asylums of this State were blind as a result of purulent ophthalmia. He then exhibited carefully prepared maps showing the proportion of purulent ophthalmia and blindness therefrom in the various counties of New York State, and called attention to the comparatively large proportion of blindness from this cause in the rural districts. In only about five per cent. of the cases, he said, was the oculist unable to prevent the destruction of the eyes, if his advice was sought sufficiently early; hence this large percentage of preventable blindness and misery was due to the omission of such proper precautions as the Credé method and the neglect to promptly obtain the necessary advice and aid. He had seen many replies from obstetricians to whom he had addressed letters regarding this subject, and they almost without exception had declared: 1. That the Credé method of instilling a weak solution of nitrate of silver into the eyes of the newly born, as a precautionary measure, should be used invariably in public institutions. 2. That it should be made obligatory there. 3. That it was not well to use it in private practice. To this last statement the speaker took exception, stating that his own position regarding this very important subject could be embodied in the conclusion of Cohn, of Breslau, reached after an exhaustive study of the subject—namely, that ophthalmia neonatorum could be and must be wiped out from every civilized country.

Dr. Bendell, of Albany, said that the fault was not entirely with the midwife; much should be attributed to the ignorant practitioner of medicine. It did not, however, seem practicable to pass laws making the use of certain remedies or methods obligatory. The general advocacy of a certain method by all the medical societies would be much more effective; but where such a disease broke out in an institution, the officers should be compelled to report the matter to the proper local authorities.

The Fitting of Glasses.—Dr. M. L. Foster, of New York, read a paper on this subject. He recommended testing the vision of each eye at a distance of twenty feet; examining the eyes with the ophthalmoscope; determining the amount of corneal astigmatism; correcting the greater refractive error first; ascertaining the range of accommodation and adding such spherical lenses as might be required to correct any presbyopia present; and detecting any muscular error, but not deciding as to the necessity of correcting this error until after repeated examination.

(To be continued.)

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of December 2, 1896.

The President, Dr. Lucius W. Hotchkiss, in the Chair.

(*Concluded from page 164.*)

Age is also an important factor in estimating the value of any treatment of diphtheria. Table VIII gives the mortality of cases treated with antitoxine, arranged according to age.

Table VIII.

Age.	Cases.	Deaths.	Per cent.	Previous mortality.	
				Per cent.	
0 to 2 years	1,494	469	31·4	63·3	Baginsky.
2 " 5 "	3,678	762	20·7	45·3	
5 " 10 "	3,184	473	14·8	24·6	
Over 10 "	1,444	99	6·9	14·6	

The contrasts shown here of the results obtained with antitoxine at the different ages and those obtained, according to Baginsky, previous to the use of antitoxine, are sufficiently evident and need no further comment.

Behring maintains that the specific curative effect of the antitoxine in diphtheria will be the more certainly excited the sooner the treatment is begun, and that out of one hundred patients with true diphtheria (showing the Klebs-Loeffler bacillus) who are injected with a curative dose of antitoxine within forty-eight hours of the beginning of the disease not more than five will die.

Table IX gives the mortality of patients treated with antitoxine, arranged according to the day of disease on which treatment was commenced.

Table IX.

	Cases.	Deaths.	Mortality, per cent.	
First day of disease	1,415	51	3·5	6 per cent.
Second day of disease	2,640	213	8·0	
Third day of disease	2,340	300	12·8	
Fourth day of disease	1,458	346	23·6	
Fifth day of disease and later......	1,912	671	35·0	
	9,765	1,581	16·1	

According to these statistics it is apparent that by far the best results are obtained when treatment is commenced early in the disease, if possible within the first forty-eight hours, and not later than the third day; that after the third day the mortality increases rapidly, and that after the fifth day comparatively little benefit is derived from the use of antitoxine. Considering the fact that in all of these statistics are included the cases of persons who were moribund at the time, or died within twenty-four hours after the first injection, it would seem that there is very good reason to believe with Behring, Kossel, Roux, and others that every fresh case of "true diphtheria" can be cured by the timely administration of an adequate dose of antitoxine; and that the contention that only five per cent. of the patients injected within the first forty-eight hours of the disease would die has actually been substantiated.

Dr. Biggs wished to bring out strongly and clearly the fact that it mattered not from what point of view the subject was regarded; if the evidence at command is properly weighed, he said, but one conclusion is or can be reached. Whether we consider the percentage mortality in cities as a whole, or in hospitals, or in private practice, or whether we take the absolute mortality for the great cities, or whether we consider only the most severe cases, the laryngeal and operative cases, or whether we study the question with relation to the day of the disease on which the treatment is begun, or the age of the patient treated—it matters not how the subject is regarded, in comparison with previous results, the conclusion is always the same—*i. e.*, there has been a reduction of mortality from the use of antitoxine in the treatment of diphtheria of not less than fifty per cent., and under the most favorable conditions a reduction to one fourth or even less of the previous rate. This has occurred not in one city at one particular time, but in many cities in many different countries at different periods and seasons of the year, and always proportionate to and in conjunction with the introduction of antitoxic serum. Then, finally, there is added the overwhelming mass of evidence derived from the personal observations of the most distinguished practitioners of medicine of every country.

It is well to bear in mind the fact that what is called "conservatism" in medicine is often a cloak assumed to cover up indolence. The acceptance of a new principle involves the expenditure of a certain amount of mental energy; the old ideas must be discarded or adjusted to the new; new information must be acquired; this all requires labor and effort. Some are not willing to expend them, nor are they willing to go over the data at hand and form conclusions for themselves. They only shake their heads wisely and predict a reaction and plead "conservatism." Do not mistake the nature of the motive of their action; it is simply indolence, not conservatism. I have no hesitation in saying that in my opinion no unprejudiced person can master the evidence now available regarding the value of antitoxine in the treatment of diphtheria and reach anything but a positive conclusion, and it seems to me nothing less than criminal for any physician, without having gone over this evidence, to refuse to accept the conclusions of others and refuse to use this remedy in the treatment of diphtheria, especially occurring in children under ten years of age.

The deductions to be drawn from a review of these statistics and reports would seem to be self-evident and conclusive. The value of antitoxine in diphtheria is no longer a question of opinion or theory, but an established fact. Those who have had the largest experience with the remedy and have most thoroughly tested its merits are most in favor of it. The few who oppose it have proved nothing in comparison with the enormous mass of evidence as to its specific value.

It may, therefore, be affirmed that the following facts have been demonstrated:

1. That diphtheria antitoxine, where generally employed, has reduced the mortality from diphtheria at least one half.
2. That it has a distinctly favorable effect on the clinical course of the disease, shortening it and lessening its severity.
3. That the earlier the treatment is commenced the better the results obtained—the mortality, when adequate doses of antitoxine have been given within the first forty-eight hours of the disease, not exceeding five per cent.
4. That antitoxine is a specific against true diphtheria (*i. e.*, where the symptoms are due solely to the Klebs-Loeffler bacillus), and is less efficacious in mixed

infections, but even in these forms of diphtheria is of decided benefit.

5. That it is not necessary to wait for a confirmatory bacteriological diagnosis, but that in every clinically suspicious case of membranous angina, especially in children, a medium dose of antitoxine should immediately be given, and repeated if required by the future developments of the case.

6. That antitoxic serum is a remedy without serious after effects in the doses which have ordinarily been employed (the after effects, such as rashes, etc., being insignificant in comparison with the danger of the disease); that it has no injurious action on the kidneys, the heart, or the nervous system; that it does not entirely prevent albuminuria, heart-failure, and post-diphtheritic paralyses, because the effects of the diphtheritic toxine which has already entered the system before the administration of the remedy, no matter how soon the treatment is begun, are not always completely counteracted by the antitoxine, though there is every reason to believe that in sufficient doses it does prevent any farther extension of the toxic action after its effects have been produced.

7. That the protection conferred by immunizing doses of antitoxine is almost absolute for a short period of time—*e. g.*, three or four weeks, when a sufficient number of antitoxine units is administered—and that with a high-grade preparation, where only very small quantities of serum are required, the remedy is absolutely harmless, even with the youngest infants.

8. That antitoxine, if not a specific cure for all forms of diphtheria occurring in the human subject, is by far the best remedy for the treatment of the disease.

To the critics of the antitoxine treatment there may be repeated the words of a famous German poet, quoted by Professor Soltmann in his treatise on the subject:

"The best critics in the world are they,
Who along with that which they gainsay
Suggest another and a better way."

Dr. L. **Emmett Holt** said that he thought it must seem clear to all present that, so far as statistical evidence was concerned, there was practically nothing to be said on the subject of the antitoxine treatment of diphtheria after this presentation of these facts. These tatistics seemed to him absolutely unanswerable. He had begun with a great deal of distrust and a great deal of timidity the use of this new remedy, but every month that he had seen antitoxine tested he had become more and more firmly convinced of its value, and at the present time it seemed to him we had no remedy or any disease that had as much in its favor as had ntitoxine in the treatment of diphtheria.

Regarding the very high mortality of diphtheria in hildren under two years of age without antitoxine, he would say that in the New York Infant Asylum, beore the days of antitoxine, the mortality among such hildren had been sixty-eight per cent. This included ot only the bad cases, but also the tonsillar cases, and hose in which perhaps the diagnosis had not been beond dispute, for this was before the time when we had he advantage of a bacteriological diagnosis. He had ad an opportunity of watching the effect of immunizng doses of the serum in very young children in the ew York Infant Asylum, and in the Nursery and hild's Hospital. In these institutions between six and ven hundred children had been so immunized, and us far not a single accident of any moment had ocrred, and there had been no serious after-consequence. This was true even of the very young infants. He had seen at one time about fifty children under three months of age immunized with the serum, the dose generally being from fifty to a hundred antitoxine units. Fifty units was the quantity for children one month old or under.

As a member of the committee of the American Pædiatric Society charged with the collective investigation on the antitoxine treatment of diphtheria, the report of which had been published last summer, he had had to go over the reports sent in by the different physicians contributing to this investigation. These physicians, in reporting their cases, had over and over again made the statement that up to the advent of antitoxine they had come to the conclusion that no remedy had any particular value in the treatment of the disease, or that after the use of antitoxine they had seen the first case of laryngeal diphtheria recover in their practice. This had been the personal and almost unanimous vote of over six hundred physicians who had sent in reports. Such testimony carried much more weight than if these cases had been observed by half a dozen men, or in a single city or institution.

It seemed to him that the medical profession of this city owed the board of health a debt of gratitude for the way in which this whole matter of diphtheria had been handled by the department for the last three or four years. Personally, he felt under great obligations to them, not only for the work done in the production and distribution of antitoxine, but for other matters in connection with the diagnosis and management of diphtheria. He thought the profession in New York had been altogether too slow in recognizing this, although its value and importance were admitted all over the world.

Dr. W. P. **Northrup** said that if there were no accidents of any great importance after the antitoxine injections, there could be no possible objection to trying a remedy which had been so well recommended. He had been conversing with Dr. J. O'Dwyer that afternoon, and had learned from him that he had frequently met with objections, even in physicians' families and about their own children, and these objections had seemed to come in waves, coincident with great opposition to the use of antitoxine, as expressed in the medical and lay press. Dr. O'Dwyer had said that he had never seen any accident from these injections. If it was well established that there was practically no fatal accident attending the injections, either for immunization or for the cure of diphtheria, it was our duty to urge the use of antitoxine on every possible occasion.

Having kept in touch with the progress of intubation, he had felt interested in knowing whether among all operators intubation had been required as often as formerly. He had found, on inquiry, that nine times out of ten when called to do intubation before 1895, it had been necessary to intubate, and usually at once; but that now in more than half of the cases intubation was not performed, although the serious nature of the case was shown by the fact that an expert intubationist had been called because of its urgency. Incidentally, it might be of interest, speaking of the reception of new things, to know what was the history of intubation. Dr. O'Dwyer said that there were three stages in the adoption of any new thing—viz.: (1) A stage of neglect; (2) a stage of ridicule; and (3) a stage of final acceptance. This had been the case with intubation, and the same had been true of antitoxine. It had now undeniably reached the third stage.

The two charts that had been presented this evening, showing the absolute mortality record for different countries and different cities, seemed to him to thoroughly answer the objection that the bacteriological diagnosis of diphtheria had made it possible to juggle with the figures. He also wished to pay a tribute to the work done by those who had engaged in the preparation of this paper, and also to the assistance that had been given by the board of health to the medical profession of New York city. He thought they had been very shabbily treated, but that in the near future they would be better appreciated. Certainly the work of our board of health had apparently been appreciated more abroad than here. The work of the New York Board of Health had been an object lesson to the world.

In conclusion, he said that the American Pædiatric Society now assumed that antitoxine had come to the third stage, or that of acceptance, and that it was now a question merely of what percentage of recoveries could be obtained in the worst class of cases in private practice in the United States and Canada. He hoped that the collective investigation this year would receive the hearty support of the medical profession at large.

Dr. H. F. Koester said that he was one of the inspectors of the health department. He had seen many cases, and the type of diphtheria had been generally severe, for the cases had usually been first seen at a late stage. Many of them had been croup cases. He had been frequently asked regarding the manner of making the injection, the dose, and the results. The inspectors had been called to cases by police telegram, and had responded promptly at all hours of the day and night. The antitoxine treatment had been carried out by the health board inspectors without any interference with the treatment of the attending physician. After having given the antitoxine injection, a visit would be made at the end of twenty-four hours, and sometimes another injection would be given at that time. It had been his custom to inject at least twenty-five hundred units at the start. Where the mothers would consent, he would immunize the other children. For children that could not be properly isolated it seemed to him both safe and desirable to use larger doses than had been generally recommended for immunizing purposes. With reference to croup cases, he believed the dose should be still larger—three thousand to thirty-five hundred units for the initial dose—and that on the next day another injection should be given. Many physicians seemed to think that antitoxine would prevent laryngeal stenosis, but this was not true. On the contrary, it had seemed to him sometimes that it had tended rather to increase the stenosis for twenty-four hours, after which the membrane would become thinner and the respirations easier. If the tube was already in place at the time of the injection it could be removed, as a rule, much sooner than formerly when antitoxine was not employed. He had never seen any bad results from antitoxine, whether used in curative or immunizing doses. He also had noticed a vacillation of opinion, apparently dependent upon the criticisms that had been made in the papers or at the medical meetings. Some physicians who had formerly called upon him early for antitoxine, had later on waited for many days, seeming suddenly to think that the antitoxine was not necessary. He believed that antitoxine was a specific for diphtheria, and that it should be used as a specific. By this he meant that the medical treatment, instead of including the administration of iron, bichloride, etc., should consist only in the administration of a heart tonic, such as strychnine or glonoin. The throat and nose should be irrigated with boric-acid solution, or with a neutral solution of hydrogen dioxide in the proportion of 1 in 3 of water. His last report to the health department had comprised ninety-three cases, with two deaths. There had been twenty-five laryngeal cases, in five of which the patients had been intubated, and all had recovered.

Dr. William J. Pulley referred chiefly to his work with the board of health. He said that he had injected in 389 cases of throat trouble. If a culture had not been made on his arrival, and the clinical picture had closely resembled diphtheria, it had been his custom to inject the antitoxine, and then make a culture. In 376 of the cases the culture had contained the Klebs-Loeffler bacilli, or the bacilli had been enough like the Klebs-Loeffler bacilli to warrant the conclusion that the case was one of true diphtheria. Of these 376 patients, 15 had been either sent to the hospital, or had refused further treatment, so that they could not be followed. Out of 361 cases, therefore, that had been followed, 303 patients had recovered and 58 had died, giving a mortality of sixteen per cent. Of the 58 that had died, 11 had been moribund when first seen, and they had only been injected at the urgent request of the family or the attending physician. Of these 11 moribund patients 5 had died from suffocation and 6 from sepsis, or profound diphtheritic toxæmia. Of the 361 cases of diphtheria 82 had been laryngeal, and 23 of the patients had died, giving a mortality of about twenty-eight per cent. Of the 23 that had died 5 had been moribund at the time of the injection. Excluding these, the mortality had been 21.9 per cent. Excluding those of the moribund, there had been 77 laryngeal cases treated with antitoxine, only 10 of which had been operative cases. Four out of the 10 patients in these operative cases had died. Of the 66 patients not operated on, 14 had died, giving a mortality of 20.8 per cent. The majority of these non-operative cases had been of a severe type. The general treatment had been with the tincture of the chloride of iron, chlorate of potassium, sometimes with bichloride of mercury; irrigations of the throat had been used very seldom, sprays very often. In the majority of cases the children had been thoroughly steamed under a tent.

In 13 out of 389 patients injected no Loeffler bacilli had been found, and of these, five had died. Four of them had had severe attacks of scarlatina. Two had died of sepsis and two of uræmia. The fifth, a child about fourteen months old, had had an extensive membrane over the tonsils, uvula, pharynx, and posterior nares, with a great deal of glandular swelling, and a temperature of about 104° F. Two different cultures had been made from this child's throat, and in neither had the Loeffler bacilli been found, but instead there had been a large number of streptococci. This case had appeared clinically to be one of diphtheria, and the patient had received an injection of about six thousand units. The speaker had noticed particularly that the antitoxine had no effect upon the membrane in this case, or upon the patient. The child had died from exhaustion two or three weeks after the last injection.

The number of persons that he had immunized up to November 1, 1896, was a hundred and sixty-three. Four of these had had diphtheria after immunization—one in seven days, one in ten days, and two in three weeks. The last two had been in the same family, and under the most distressing sanitary surroundings. At that time he had been using small immunizing doses, but after these cases he had made it a rule not to give less than two hundred and fifty immunizing units to children over six months of age with such bad surroundings. Every one whom he had immunized had been exposed to one or more cases of diphtheria. He had invariably injected the antitoxine into the lumbar region. The curative dose had always been fifteen hundred units or more, even in a mild case of diphtheria. For a severe case he would give from twenty-five hundred to three thousand units. He had made six hundred and sixty-one injections of antitoxine, and after none of these had there been any symptom of any moment. Usually the rashes alone had caused trouble. In two cases there had been abscesses—both in the same family, and both in children with very filthy skin.

Dr. **Floyd M. Crandall** said that the statement made in the paper, that although the number of antitoxine units administered was being increased the number of cases of rashes was diminishing, would seem to indicate that these bad symptoms were probably due to imperfections in the serum rather than to the antitoxine itself. Last winter he had had an opportunity of watching the effect of antitoxine in two cases of congenital cardiac disease—one of them in a very blue child of four years. This child had received two thousand units of antitoxine, and had shown no effect on the heart whatever. Both children had made a good recovery. It seemed to him that the tables of statistics presented, especially those of absolute mortality, were especially convincing. Dr. Biggs deserved the thanks of the society for bringing them forward.

Dr. **Joseph E. Winters** said that if antitoxine accomplished the remarkable results that had been alleged for it, he would like to know why it was that such a man as Dr. Francis Huber, who probably came into close contact with more cases of diphtheria than any one who had spoken to-night, should have been compelled to give up antitoxine after a very careful trial. He had given up its use because of the results obtained. Without antitoxine he was now getting most excellent esults. In laryngeal operative cases he had secured ust as good results as those reported by the American Pædiatric Society committee from the use of antitoxine. f antitoxine did all that had been alleged for it, why was t that Dr. John Dorning, in seven successive cases of iphtheria in private practice, treated with antitoxine n the very beginning of the disease, had lost every one f the patients? And why should Dr. Alexander Dallas, f Bayonne, an old Scotchman, and a shrewd practioner of large practice, have lost with antitoxine ten paents in eleven consecutive cases? Why should Dr. mith, of Newark, a man who had been in practice for venty-two years, and who was the leading practitioner his city, give up the use of antitoxine if it did all that ad been alleged for it to-night? He had just received a tter from Dr. Haggerty, who stated that he had been ompelled, along with Dr. Huber, to give up the use antitoxine. If it had done all that had been alleged r it, why was it that Dr. W. Dayton, of London, ho had lived in the midst of diphtheria for thirty ars, and who, as the senior member, had signed the port favoring the use of antitoxine in the London spitals, had refused to have it used upon himself hen he had been stricken with the disease? He now d in his pocket a letter from Dr. Dayton, stating at he was recovering from diphtheria, and that he had post-diphtheritic paralysis. As he had failed to state whether or not antitoxine had been used upon him Dr. Winters had asked Mrs. Winters to call upon him and inquire as to this point. His reply to her had been: "No, I would not have antitoxine used on me if I were to die of diphtheria." Again, why should Dr. William M. Welch, of Philadelphia, who probably had had a more intimate knowledge of diphtheria than any man in America, having had entire charge of the Municipal Hospital there for over twenty-five years, state positively that he would not have antitoxine used upon himself under any circumstances?

With reference to the statement made about the time of wearing the tube being shorter than before antitoxine was used, he would say that Dr. Welch had stated to him the other day at the Willard Parker Hospital that the average time of wearing the tube in the Municipal Hospital under the antitoxine treatment had been ten days, while before that the average time had been five or six days.

With reference to the statements made about the actual mortality—*e. g.*, that the mortality of Paris at the present time was about one third what it had been in previous years—he would say that in the files of the *Lancet* would be found recorded only three deaths in the city of Dublin from diphtheria since one year ago last June. For over a year there had not been a death from diphtheria in that city, yet antitoxine had not been used there. A few years ago, in Boston there had been two hundred and twelve deaths from diphtheria in one year, yet in the next year there had been eight or nine hundred deaths—a greater variation than in Paris with antitoxine. Dr. Adolph Rupp had stated to him recently that formerly cases of laryngeal diphtheria had steadily progressed under any treatment to intubation, and in some cases still further to tracheotomy, while at the present time in the same cases, so far as could be determined clinically, the patients got well under the same treatment without any operative interference. It was again the old question of the character of the epidemic.

In connection with the statement that the mortality was so very low in operative cases under antitoxine treatment, he would simply refer to a recent case in which Dr. Burton had made a diagnosis of diphtheritic croup, and had insisted on the use of antitoxine. Instead, Dr. W. L. Stowell had been called, and suspecting it to be a case of catarrhal croup, had ordered a dose of castor oil and the application of poultices. The patient had recovered in forty-eight hours.

It was entirely a question of the character of the epidemic, and a report which covered thousands of cases, indiscriminately collected from all parts of the world, was certainly of no value to any one who had seen anything of diphtheria. The material must be studied carefully in all diseases, particularly in the infectious diseases. It seemed to him that we could not get at the truth until all bias had been eliminated, and until everything that came along that was possibly diphtheria had been subjected to the antitoxine treatment. Dr. Stowell had told him that a health-board inspector had refused to inject a number of patients at Randall's Island because he said it would injure the statistics, and Dr. De Kraft had made a similar statement to him. Dr. Welch had stated that in the majority of cases in Philadelphia, which were clinically unquestionably diphtheria, a negative culture would be obtained, but that in these same cases after the throat had entirely cleared and there was no evidence of the disease, the laboratory would find positive evidence of diphtheria. This had been the rule there. Last year there had been two persons sent to Bellevue Hospital for treatment for diphtheria, with a bacteriological diagnosis of diphtheria, yet they had turned out to have nothing but syphilis.

Dr. Biggs said that in reply to Dr. Winters's question he would simply ask another question—*i. e.*, why there were antivaccination societies in this country, and antivaccinationists all over England, and why they had had an epidemic of small-pox in Gloucester last year due to the agitation of the antivaccinationists, and the consequent lack of vaccination of the inhabitants, which had finally required the intervention of the local government board of Great Britain to stamp it out. Again, he would ask Dr. Winters why he found it necessary to describe these men who were opposed to antitoxine. If they were distinguished physicians, it would not be necessary to tell what extensive experience they had had. It was not necessary to describe Welch, or Osler, of the Johns Hopkins University, or Janeway, or von Ranke, or Baginsky, or Roux, or Koch, or one hundred and fifty more men of that stamp. Dr. Winters's associates, however, did need such description. It seemed hardly necessary to say that when a collection of twenty-five thousand cases, derived from one hundred and fifty reports, formed the basis of a medical paper, the reading of which could not occupy more than forty or fifty minutes, it was impossible to give the references and data; but they were all there, nevertheless, and would be published in the official bulletin of the health department.

The reference to specific cases in a matter of this kind—such as one case of supposed diphtheria turning out to be syphilis, or another case showing diphtheria bacilli turning out to be something else, or a case of supposed diphtheria turning out to be one of catarrhal croup and the patient getting well after a dose of castor oil—made the task of replying a hopeless one. These cases should be contrasted with the reports of about fifty thousand cases from the best clinical observers throughout the civilized world. He believed there was not a professor of the diseases of children in any university in Germany or Austria whose name was not on the list of those favoring antitoxine, and he would hold this list up in contrast to the names mentioned by Dr. Winters.

Miscellany.

The Dissemination of Scarlet Fever by Mail.—Grasset (*Annales d'hygiene publique*, xxxiv; *Centralblatt für Bakteriologie, Parasitenkunde und Infectionskrankheiten*, January 9, 1897), on investigating the source of infection in an instance in which a child was attacked with scarlet fever in a place where there had been no case of the disease for years, found that, six days before the onset of the child's illness, a letter had been received from its grandparents stating that another child living with them had just had scarlet fever and was shedding its skin "like a snake." Two flakes of the convalescent's skin were inclosed in the letter, which, together with its contents, had been employed as a plaything by the child first mentioned:

Grasset cites another instance, recorded by Launé, of the conveyance of scarlet fever by means of a letter. A lady in Germany wrote to two of her acquaintances in France, saying that she had just had scarlet fever and was peeling so copiously that while writing she had been obliged to brush off the sheet of paper several times. Both the recipients of the letter were seized with scarlet fever in the course of a few days, and one of them died of it.

Kayserling's Method of Preserving Anatomical Specimens.—At a recent meeting of the Vienna Obstetrical and Gynæcological Society (*Centralblatt für Gynäkologie*, January 16, 1897), Dr. Endletsberger described the method, which, it seems, has undergone several modifications since Kayserling described it in the *Berliner klinische Wochenschrift*, 1896, No. 33. It is said to be particularly suitable for use in museums, being reasonably cheap, taking very little time, and preserving the preparations so perfectly that they are serviceable for histological examination for a long time, the natural color being preserved even to the slightest shade. A section of a fœtal brain shown by Dr. Endletsberger looked quite fresh, although the preparation was three weeks old. The same was true of a multilocular cystoma showing hæmorrhages, also of a section through a myomatous uterus.

The method, as at present practised, is as follows: The specimen is wrapped in wadding in such a way as to give it the desired attitude, and kept for from twenty-four to forty-eight hours, according to its size, in the following solution:

Formalin	25 parts;
Potassium acetate	3 "
Potassium nitrate	1 part;
Water	100 parts.

Then for the same length of time it is kept in ninety-five per cent. alcohol, and during this immersion in alcohol it regains the color which it had partially lost in the formalin solution. It is then ready for permanent immersion in the following solution:

Glycerin	50 parts;
Alcohol	10 "
Potassium acetate	3 "
Water	150 "

The preparation must be kept in a dark place until the process is completed.

The Hunyadi Janos Water.—By permission of the proprietors of the *Lancet*, we reproduce the following report of its special analytical commission on natural mineral waters, which appeared in the issue of that journal for December 5, 1896:

Natural mineral waters of the purgative saline type have been brought so prominently before the notice of the profession of late that in the interests of therapeutics and pharmacology it is desirable that an exact knowledge of the chemical composition of these waters should be known, while it is also important that those who may prescribe them should have some assurance as to their constancy of composition and purity. A carefully conducted analysis will, of course, establish the composition and therapeutic value of the water and the relation o the constituents which it contains, and may afford, in addition, some evidence on the question of its natura origin. The evidence of chemical analysis alone and without other facts being taken into consideration can not be regarded as affording a decisive answer to th question—Is the water a natural one? It is quite with in the bounds of possibility to so imitate the chemica composition of a natural water, even in regard to th rarer constituents, as to defy differentiating by chemic means. We are not aware that such deceit is ever practised, but it is possible. To do this, however, with anything approaching exactness would involve considerable skill and trouble, especially in regard to the smaller constituents and toward securing the correct ratio of the constituents to each other. So far, then, a chemical analysis giving not only the proportion of the chief constituents, but also of those that are considerably less in amount, would afford some clew toward discriminating between a water of natural occurrence and one that is a prepared pharmaceutical product. It is, therefore, of no small importance that the practitioner should be in possession of as complete an analysis as possible of the water he may recommend, and, further, any additional evidence as to the general *bona-fide* character of the water and as to its purity should not be disregarded.

The *Lancet* has published independent analyses from time to time of several natural mineral waters with the view of enabling the profession to judge the probable therapeutic value for themselves. To put them in possession of further facts relating to the natural source of the water is obviously difficult in the absence of any practical acquaintance of its history at the fountain ead and of its surroundings, as well as of the modes of ollection, bottling, and dispatch. The circumstances s to how such waters occur in Nature, as to the probble origin of their constituents, as to the methods of ollecting the water and distributing it are, it must be dmitted, not matters of common knowledge. At any ate, it is important that a practitioner should know hese details in regard to a medicinal agent which he nay be constantly prescribing, and the facts concerned an not but prove of general interest also. An opporunity has recently occurred to one of our commissioners hile on a visit to several of the largest cities on the Coninent of inspecting one of the most extensive and most idely known establishments where an unlimited suply of natural bitter purgative water of the sulphate lass occurs, and the occasion is one which may be taken dvantage of in presenting our readers with what we enture to think should prove an interesting account f the processes he witnessed there. The establishment eferred to is that belonging to Mrs. Saxlehner and ounded by her husband (the late Andreas Saxlehner) 1863.

It is from the Saxlehner springs that "Hunyadi ános" water is derived, the prototype of all bitter wars and especially distinguished by that name. Parenetically it may be stated that the name "Hunyadi ános" in no wise relates to the district; it is the name a Hungarian celebrity, John Hunyadi, who flourished the fifteenth century, and after whom the water was lled by its discoverer. The valley in which the Saxhner springs are situated is known as the "Orsöd" lley, which is located a few miles south from Budast on the right bank of the Danube. The property mprises some two hundred and eighty acres, of which e hundred and twenty are employed for obtaining unyadi János water, and entirely occupies the valley, ich is bounded by a series of picturesque hills which y be regarded as remote branches of more rugged ountains beyond. The view of the entire establishent shown in the accompanying illustration, Fig. 1, ves a very good idea of the dimensions of the underking and of its situation, and is taken from the Dobogo ll on the northern side. The wells are covered in by a oden structure which is proof against weather, and ey number over one hundred. The surface of the ground is practically level, is covered with luxuriant grasses, and is very soft to walk upon. The wells are shallow and in the majority of cases not more than eight metres deep, the surface of the water when the well is full being within two metres of the ground surface. Special precautions are therefore taken to prevent contaminations with surface drainage, and to this end the well is lined with strong cement about two metres deep. At the bottom is impenetrable clay. Not only are strict precautions taken against the ingress of surface water, rain, and so on, but on no account is human refuse or dejecta of any kind allowed to be disposed of on any single portion of the property. Human excreta are carried away and disposed of in Budapest in an approved way, and even the dejecta of horses are carefully excluded from the vicinity of the wells. These precautions are admirable, and the same spirit of carrying out what in the interests of sanitation and of the purity of the water is imperatively demanded obtains also in every other matter.

The interior of the well-house is seen in Fig. 2. This well, which is typical of the rest, is closed by flaps provided underneath with aluminum sheeting. There is a small square opening in the left flap which is used for the shaft of the pump and is of small size to exclude as far as possible dust and other objectionable matters. At the back of the well is a pipe running vertically, which serves to ventilate the air space in the well. The apparatus seen in the illustration to be resting on the closed flaps was part of that employed by our commissioner in making certain tests on the spot. Thus to the left is a hydrometer case, and to the right of this again two cylinders, one containing the water with a hydrometer floating in it and the other a thermometer; to the right of these again is a bottle conveniently attached to a cord for the purpose of obtaining a sample. In the far right-hand corner will be observed a small well with circular opening and flap which in the illustration is open. This consists of a small chamber quite separate from the well itself just described, which communicates by means of earthenware pipes with a reservoir situated just outside the filling house some hundred feet away. The level of the reservoir is somewhat lower than that of the well cistern, so that when water is discharged into the cistern it finds its way along the pipes to the reservoir. In other words, this cistern at the well acts like a large funnel for the purpose of conveying the water away to the reservoir previously to its arrival in the filling house. This is done by attaching a pump to the big well when the well is full and pumping the water into the small cistern referred to. Thence the water flows by gravitation into the large reservoir. The manner in which this operation is carried out is indicated in Fig. 3, where well-house No. 77 is depicted with the pump outside. The pump sucking up the water from the well and discharging it into the cistern through a pipe to the right will now be readily recognized.

The contents of each well are thus discharged into a large reservoir into which the waters from various wells flow and where they attain a uniform degree of density or specific gravity, and, therefore, of composition in regard to saline constituents. In no stage in the collecting process is there any interference with the natural character of the water—nothing is added and nothing is abstracted. Moreover, the water of one well that may be slightly weak is compensated by mixing with the water of another that is slightly strong, so that what is bottled is absolutely constant in composition. This will be found to coincide with the analysis made by Liebig and corresponding with a density of 1.036 at 60° F. The temperature of the water in the wells averaged 51° F. The analysis given by Liebig of the waters bottled at this density is as follows:

Sulphate of magnesium......	16.01	parts per 1,000.
Sulphate of sodium..........	15.91	" " "
Sulphate of potassium........	0.08	" " "
Chloride of sodium..........	1.30	" " "
Carbonate of sodium..........	0.79	" " "
Carbonate of calcium........	0.93	
Carbonic acid, free and in solution	0.52	" " "

The water of constant degree of density is next elevated into a large wooden vat situated in the filling house and shown in Fig. 4. This vat is thoroughly cleansed by means of steam twice weekly. Thence the water is allowed to flow, according to the number of bottles being filled, into the ingenious filling apparatus situated almost exactly below the vat. Corking, capsuling, and labeling complete the process. The capsuling process is particularly ingenious, as is also the filling apparatus, which was specially designed for Messrs. Saxlehner, and capable of filling one hundred thousand bottles in twenty-four hours. It should be added here that all the wells yielding the Hunyadi János water come under the control of the head office of the first district of Budapest, which is subject to the authority of the Ministry of the Interior, who have the entire administration of affairs in Hungary over the whole of the mineral waters, springs, and health resorts in the country. Further, as regards filling and corking and their management, these establishments and wells are submitted from time to time to local inspection, executed by the officials of the district head office, whose competency is established by the existing laws and orders; and, again, bottles filled in presence of the officials and sealed before them for the purpose of authoritative supervision and control are, if considered necessary, officially analyzed.

On examining the label of one of the samples so obtained the following Hungarian statement translated into English occurs: "The natural bitter water contained in this bottle was yielded from the Hunyadi János Springs, property of Andreas Saxlehner, in the presence of the Chief of the District, mentioned below, and the bottle was officially sealed. Budapest, 19th December, 1884. Office of District No. 1.—Signed by the Secretary and Chief of the Municipality District."

The establishment is open to the inspection of visitors, and especially medical men, on presenting their card at the Saxlehner Offices, No. 3 Andrassy Street, Budapest, and the Saxlehner Spring, whence the Hunyadi János water is derived, is counted one of the sights worth seeing in and around the interesting and enterprising city of Budapest.

The most satisfactory way of establishing the honesty of a natural water is undoubtedly to secure specimens on the spot and to make independent analyses of them and to compare the results with samples obtained in the ordinary way on the market. If the result coincide there can remain no doubt that the water offere for sale is precisely the same as that drawn from th fountain head. Our commissioner having obtained th permission of the proprietors, which was freely given, t select samples wherever and whenever he chose and from any single well out of the hundred on the property, or o specimens in the filling apparatus, proceeded to do so the samples being subsequently sealed and sent to th *Lancet* Laboratory for complete analysis. At the sam time some dozen samples of the water were purchase in various and widely separated parts of London fo analysis also, with the view of contrasting the results.

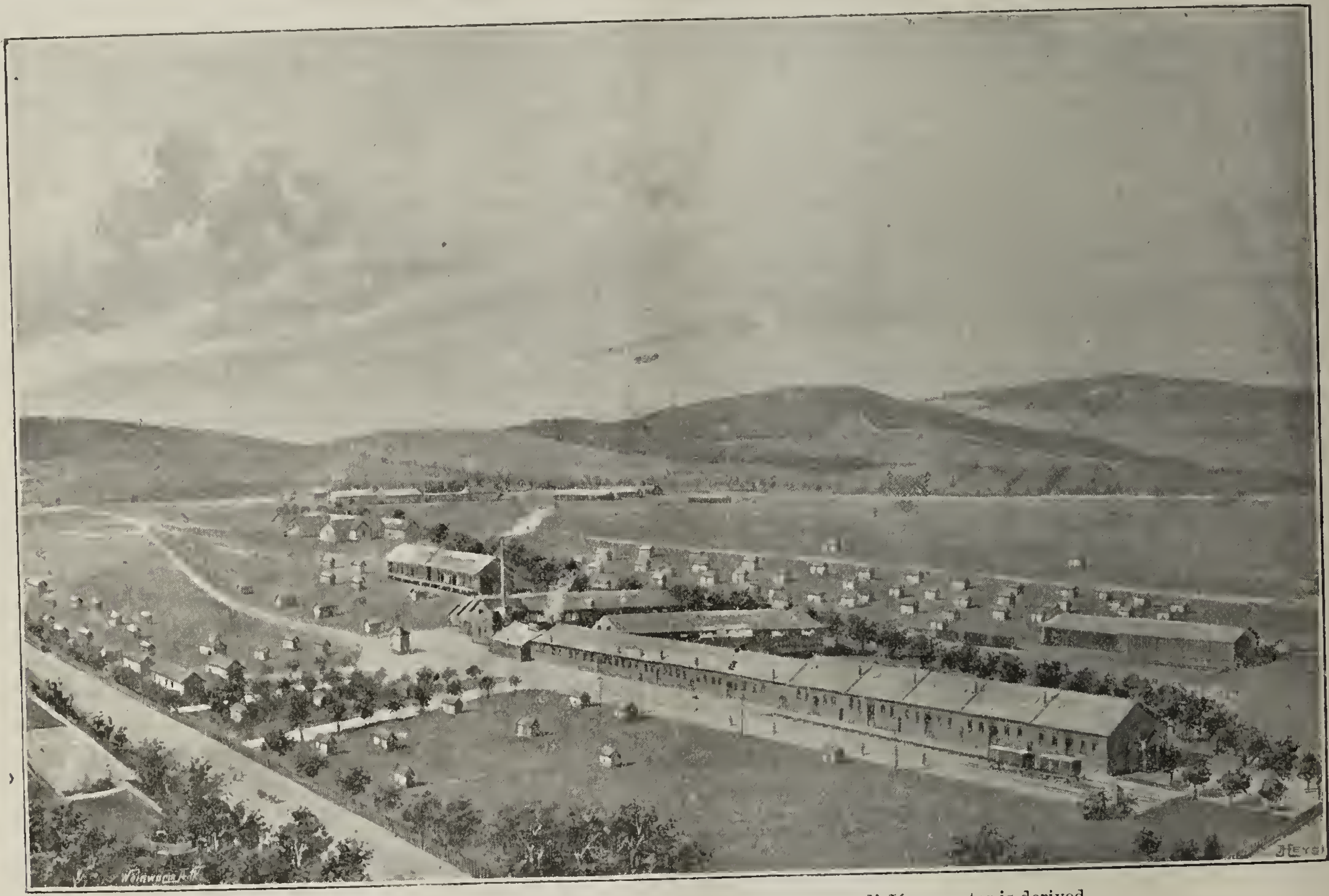

Fig. 1.—General view of the Saxlehner Springs whence the Hunyadi János water is derived.

In order to make the search for rare constituents as thorough as possible no less than twenty-five litres of the water direct from the filling apparatus, and showing a density of 1.036, was evaporated carefully down to dryness in a shallow copper vessel. This operation was conducted at the spring, and a clear crystalline residue was obtained, which was found to weigh nearly a thousand grammes (more correctly, 917.81 grammes), or two pounds and three eighths of an ounce. This amounts to 36.71 parts of salts in a thousand parts of the water, an amount which almost exactly coincides with that obtained by Liebig. Considering that probably Liebig perated on a comparatively small volume of the water, nd that in the experiment just described no less than wenty-five litres, or forty-four pints, or five gallons nd a half were employed, the results are remarkably lose and testify to the uniformity of composition of Iunyadi János water. The percentage composition of he salts so obtained was ascertained by analyses to be as ollows:

Magnesium sulphate	44.68	per cent.
Sodium sulphate	47.21	"
Sodium chloride	4.11	"
Sodium carbonate	1.72	"
Calcium carbonate	2.20	"
Lithium chloride	0.08	"
	100.00	"

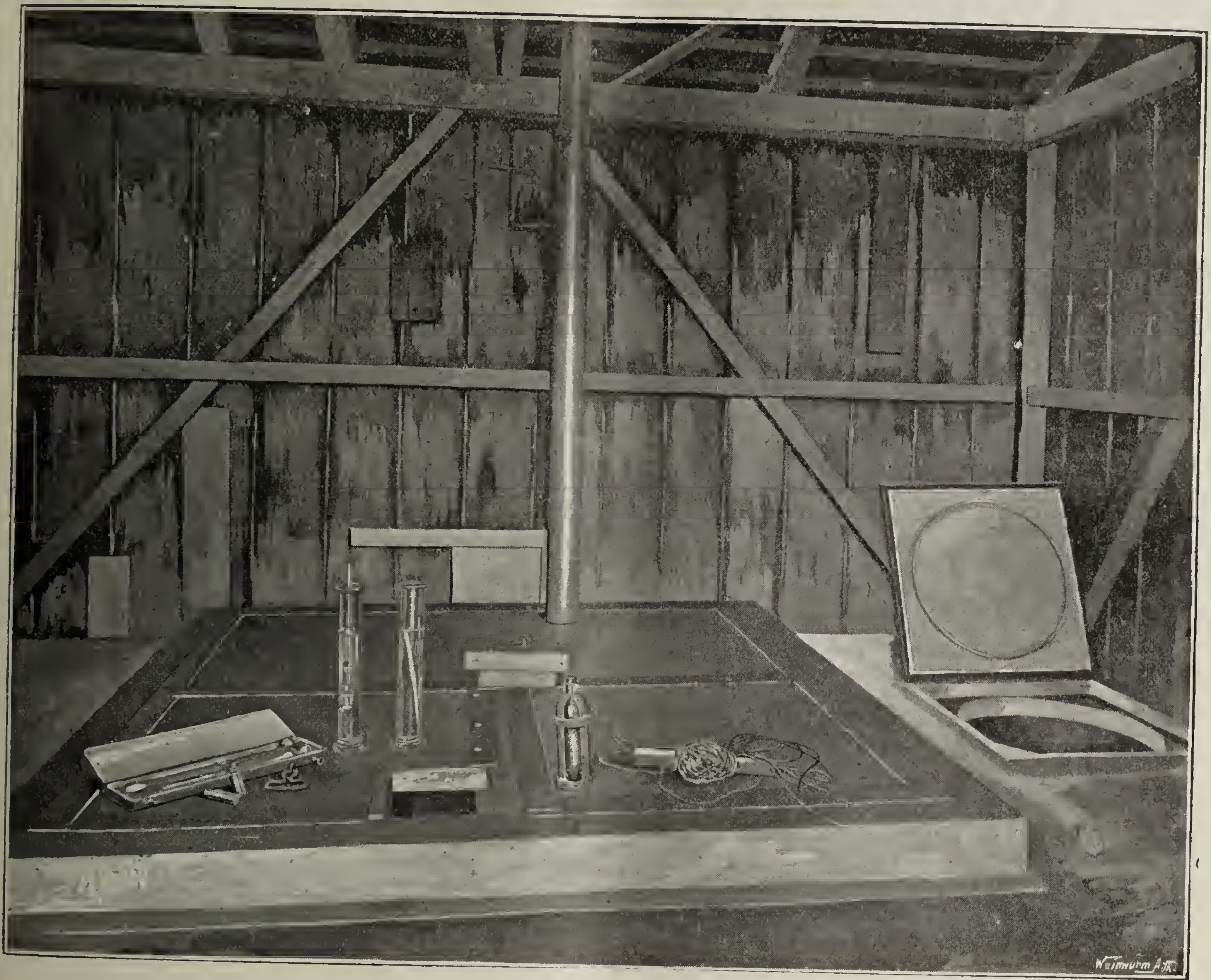

Fig. 2.—Interior of well-house.

A search for rare constituents in addition to lithia, ke cæsium and rubidium, was attended with negative results. The lithium was perfectly distinct and was readily isolated in the form of chloride. It amounted to exactly two grains of lithium chloride per gallon. There was, however, no difficulty in recognizing lithia in the whole of the samples examined—that is to say, both in those obtained at the springs and in those purchased.

The total results of the analyses made with the samples may next be recorded. A description of each sample is appended.

Sample A.—This was a sample which had been sealed in the manner already described by the authorities at Budapest, and attached to the bottle was a label containing a statement in Hungarian which we have already given at length. The sample was sealed in 1884.

Specific gravity	1036.0
	Grammes per litre.
Magnesium sulphate	15.84
Sodium sulphate	16.76
Sodium chloride	1.46
Sodium carbonate	0.61
Calcium carbonate	0.78
Lithium chloride	0.028
Free carbonic acid	0.40

The amount of lithium chloride given in the above analysis and in those that follow is based upon that found in the salts evaporated from twenty-five litres.

Sample B.—This sample was taken direct from the filling apparatus.

Specific gravity................ 1036.0

	Grammes per litre.
Magnesium sulphate	17.44
Sodium sulphate	16.46
Sodium chloride	1.55
Sodium carbonate	0.95
Calcium carbonate	0.90
Lithium chloride	0.029
Free carbonic acid	0.37

Sample C.—This was a sample taken direct from the tank supplying the reservoir in the filling room. This contains the waters derived from several wells.

Specific gravity........ 1036.0

	Grammes per litre.
Magnesium sulphate	17.44
Sodium sulphate	18.23
Sodium chloride	1.52
Sodium carbonate	0.99
Calcium carbonate	0.96
Lithium chloride	0.031
Free carbonic acid	0.51

Sample D.—This sample was taken from well No. 77, which is illustrated in Fig. 3.

Specific gravity........ 1037.0

	Grammes per litre.
Magnesium sulphate	18.13
Sodium sulphate	18.66
Sodium chloride	1.66
Sodium carbonate	1.11
Calcium carbonate	0.90
Lithium chloride	0.032
Free carbonic acid	0.49

Sample E.—This sample was taken from well No. 50.

Specific gravity........ 1021.0

	Grammes per litre.
Magnesium sulphate	9.00
Sodium sulphate	10.83
Sodium chloride	0.85
Sodium carbonate	0.48
Calcium carbonate	0.80
Lithium chloride	0.025
Free carbonic acid	0.51

As the specific gravity indicated, this sample proved to be slightly weaker in saline constituents, and the analysis is interesting in showing that the ratio of constituents is practically the same as in other specimens.

Sample F.—This sample was taken from well No. 23.

Specific gravity........ 1042.0

	Grammes per litre.
Magnesium sulphate	19.95
Sodium sulphate	21.84
Sodium chloride	1.90
Sodium carbonate	0.95
Calcium carbonate	1.06
Lithium chloride	0.036
Free carbonic acid	0.32

Here the specific gravity indicates a richer proportion of salts, which is confirmed by analysis. The sample is somewhat above the usual strength, but in getting mixed with the waters from other wells would be reduced to an average grade composition. That the ratio of the constituents is the same is again a noteworthy feature.

Sample G.—This sample was purchased at a shop in the Strand.

Specific gravity........ 1036.0

	Grammes per litre.
Magnesium sulphate	18.34
Sodium sulphate	18.94
Sodium chloride	1.57
Sodium carbonate	0.95
Calcium carbonate	0.92
Lithium chloride	0.032
Free carbonic acid	0.50

As will be seen, the composition of this shop sample is identical with the samples obtained from the springs.

Sample H.—This sample was purchased at the Civil Service Stores.

Specific gravity........ 1036.0

	Grammes per litre.
Magnesium sulphate	18.22
Sodium sulphate	17.14
Sodium chloride	1.52
Sodium carbonate	0.91
Calcium carbonate	0.86
Lithium chloride	0.030
Free carbonic acid	0.48

The composition of this sample differs in no essential respect from that of the previous one.

The mean results of the complete analyses of these eight samples will be found to be as follows:

Specific gravity........ 1036.0

	Grammes per litre.
Magnesium sulphate	16.79
Sodium sulphate	17.35
Sodium chloride	1.50
Sodium carbonate	0.87
Calcium carbonate	0.89
Lithium chloride	0.03
Free carbonic acid	0.49
Mean total solid constituents	37.92

Ten additional specimens were obtained at various shops throughout the metropolis, and the following results giving the specific gravity indicate the same consistency of composition, since obviously the degree of density depends upon the amount of dissolved constituents. In addition, lithium was detected in each and all by means of the spectroscope.

	Specific gravity.
Sample No. 1	1036.0
Sample No. 2	1036.0
Sample No. 3	1038.0
Sample No. 4	1038.0
Sample No. 5	1035.0
Sample No. 6	1037.0
Sample No. 7	1037.0
Sample No. 8	1039.0
Sample No. 9	1037.0
Sample No. 10	1038.0

Finally, the water was examined with a view to determining whether it contained organic matter in any form. In the first place it should be stated that eve when twenty-five litres was evaporated to dryness an heated there was practically no sign of discoloration o charring. The following results affording additiona evidence of the organic purity of the water were als obtained:

	Grains per gallon.
Free ammonia	None
Albuminoid ammonia	Slight trace
Nitrogen in nitrates	0.07

There is thus no evidence whatever of objectionable con tamination nor of any organic impurity. This abundant ly shows that the admirable sanitary precautions taken a the springs and in their immediate neighborhood are n taken in vain.

There are several features in the entire series analyses worthy of remark. To begin with, the important fact is established that whatever modification the water may undergo in regard to strength, the ratio of its medicinal constituents is absolutely the same. But, as has been pointed out elsewhere, although the proportion of total salts may vary slightly in the different waters taken from a hundred wells, yet on mixing an average composition is obtained which is constant. Another point worthy of emphasis is the practical identity in composition of the samples of water obtained on the spot with the samples purchased in bottle at shops in London. This affords conclusive evidence of the honesty of the water. Taking the mean composition as a basis we find that the ratio of sulphate of magnesium to sulphate of sodium is as 1 : 1, while common salt occurs to the extent of about one twentieth of the total amount of the sulphates. Carbonate of sodium again amounts to 0.87 gramme per litre, a quantity which is quite sufficient to render the water distinctly alkaline. Carbonate of calcium occurs in similar quantity, traces of this compound invariably accompanying magnesia when abundantly found. Then the water contains about half a gramme of carbonic acid, which is equivalent to a fifth of its volume of carbonic-acid gas. The presence of this gas in solution contributes in no small measure to its palatability, in spite of the rich proportion of saline constituents. As regards lithia, this occurs in distinct quantity, probably as chloride. It is doubtful, however, whether this small quantity signifies anything of medicinal importance. Before the *quantity* of lithium chloride in a natural aperient water has been ascertained it is not possible to attach any medicinal value to the water on this account. The quantity of lithium chloride, which is only two grains per gallon, must be very small in the average dose, a wineglassful, of the water, and accordingly can possess very little value. The presence of lithium, however, is interesting in indicating the genuineness of the water as one from a natural source. It was found in every sample examined, including those purchased and those obtained at the spring. Finally, a very important feature in the results of these analyses consists in the fact that they accord very closely indeed with the results obtained by Liebig thirty years ago. Thus nothing could be more satisfactory from the therapeutic point of view than to be able to state that the composition of Hunyadi János water has remained substantially the same over a period of thirty years.

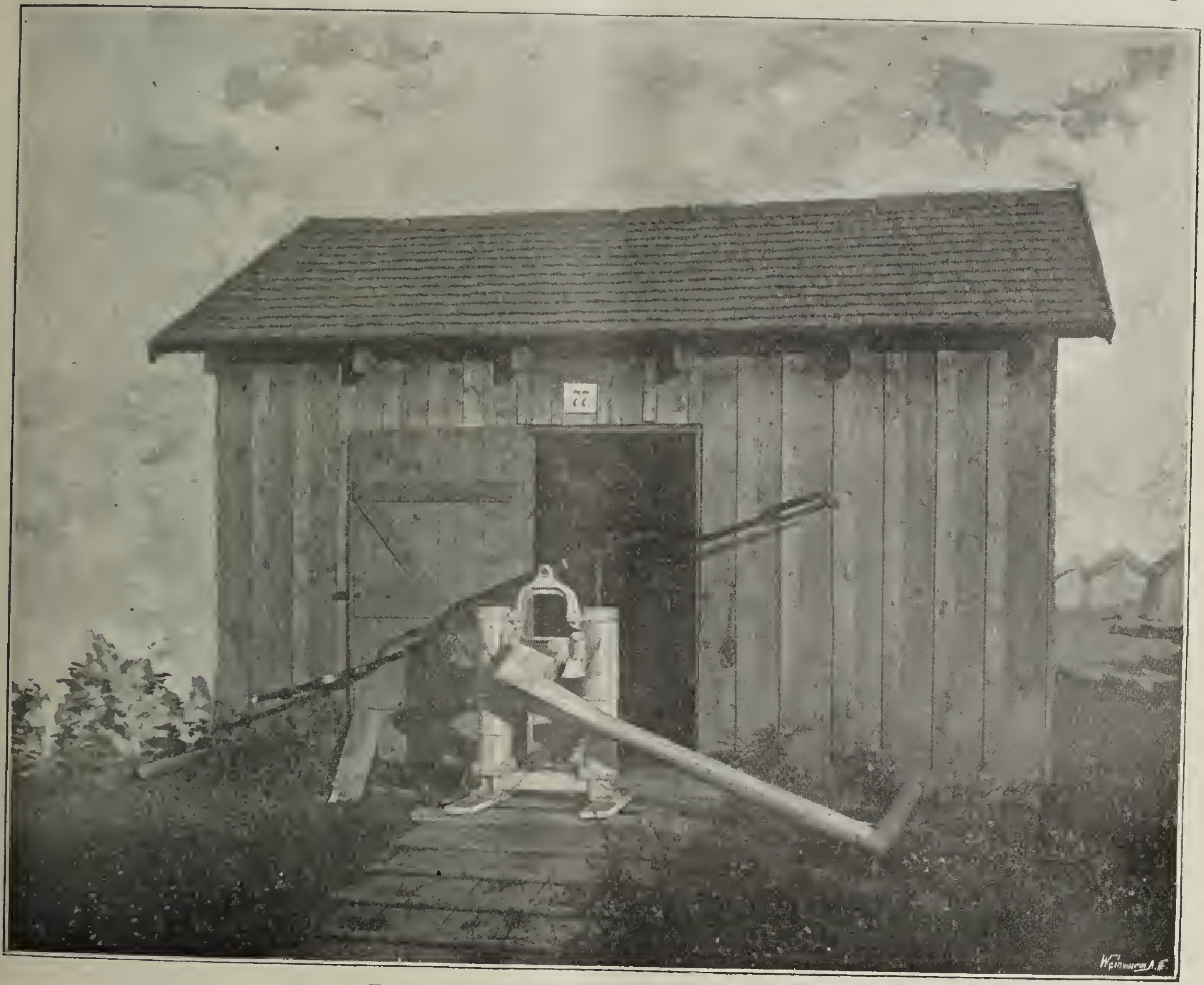

Fig. 3.—Exterior of well-house with pumps in position.

A consideration of the foregoing results renders the chemistry of Hunyadi János water quite clear, and therefore its therapeutic efficacy can be adjudged to a degree; and since its composition is constant its medicinal effect will not be variable. Further, they establish the important conclusion that the water delivered in London is identical with the natural water obtained from the wells near Budapest. Considerable attention has recently been given to the question of the respective merits of an excess of sodium sulphate or magnesium sulphate in naturally occurring bitter waters. Some have

stated that those waters act most pleasantly in which the magnesium preponderates over the sodium sulphate, since it has been maintained that where the sodium is in excess of the magnesium sulphate the purgative action of the water is too drastic, an effect which may lead to disturbed digestive function and in course of time to debility. On the other hand, some have advanced arguments in favor of a moderate excess of sodium salt on the ground that its action is more prompt and certain. Sulphate of sodium is generally regarded as a more powerful purgative than sulphate of magnesium, which is described as a mild, painless, non-nauseating purgative, and less rapid in its action than sodium salt. Whichever argument obtains, however, matters but little in the case of Hunyadi János water, since both the salts occur in practically equal quantities, and doubtless this fact tends to produce a modifying and beneficial effect of both constituents. There can be little doubt that the presence of other salts, such as chloride of sodium and carbonate of sodium, in Hunyadi János water has also a modifying and favorable influence. Lastly, the therapeutic advantage of these salts occurring in a natural water is practically conceded. Why a natural water containing certain salts in certain proportion should act more favorably than a water artificially prepared, and containing the same proportion and quantity of constituents, is by no means understood, and certainly up to the present chemistry fails us for an explanation. An authority has said in some remarks upon the administration of natural mineral waters that what are called artificial waters, however admirably prepared, are simply pharmaceutical products and are destitute of a remarkable quality which distinguishes them from the remedies they are intended to imitate, and whatever this difference may be due to it is an established certainty so far that it sharply distinguishes the action of mineral waters containing salts naturally in solution from the action of salts which are made by pharmaceutical processes. The importance, therefore, of employing a natural water when it contains the salts that are indicated in medicinal treatmen
is obvious, and any facts which prove a guide to discrim
inating between a mineral water that is natural and o
that is artificial will be manifestly of value.

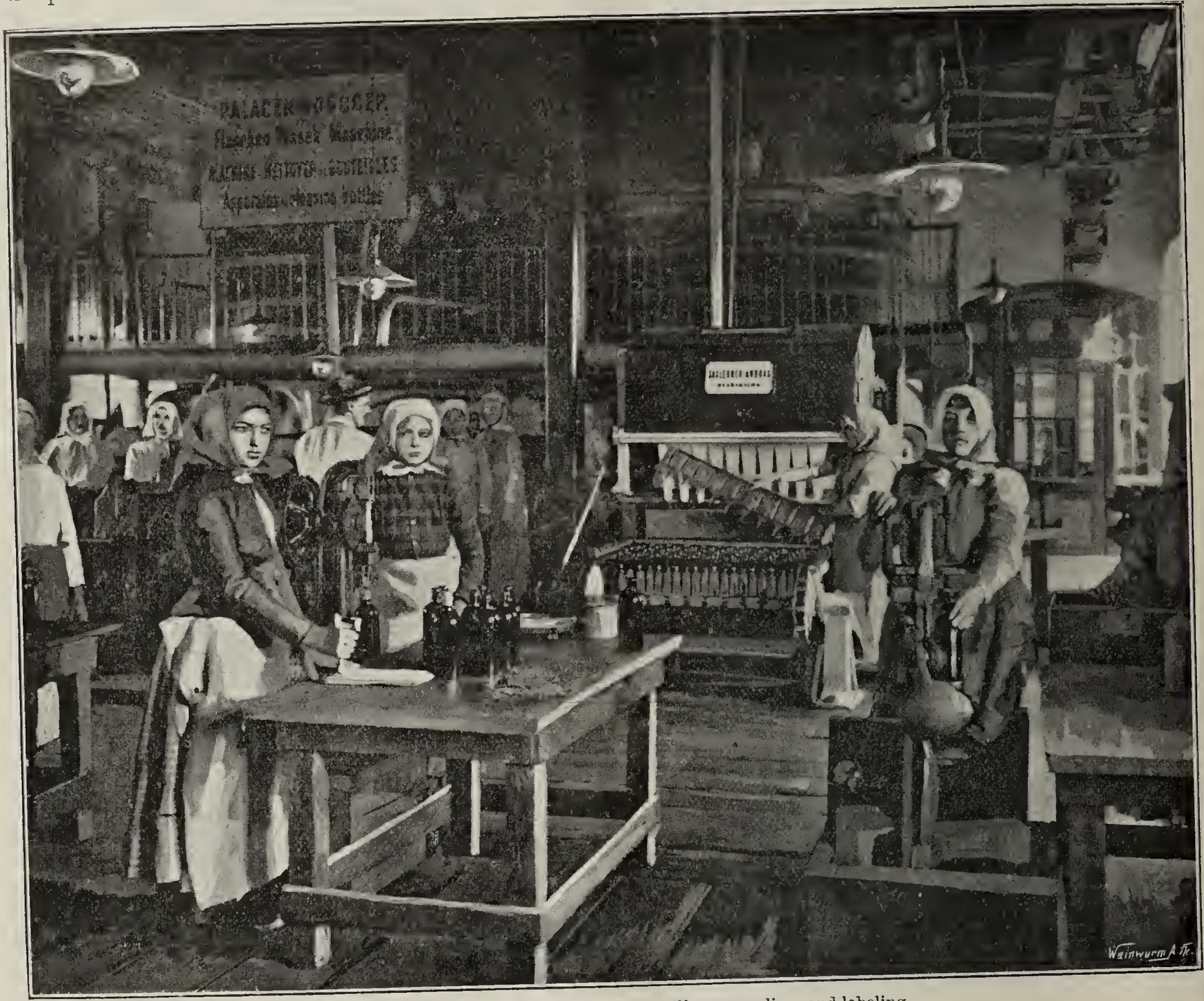
Wainwurm A. fk.

FIG. 4.—Interior of filling-house, showing filling, capsuling, and labeling.

How the composition of these saline purgative wate
is effected in Nature's laboratory is a point of extrem
interest. It is probable that the prime materials at har
for this purpose are dolomite, as the source of magnesi
in conjunction probably with sodium carbonate, whic
are slowly acted upon by the products of oxidation
iron pyrites. One of the latter products would be su
phuric acid, which may be supposed to dissolve the dol
mite or native carbonate of magnesium and the ca
bonate of sodium, forming sulphates of these metals a
free carbonic-acid gas. All these products at any ra
occur in Hunyadi János water, and the materials fro
which it is presumed they are formed are found abu
dantly in the mountains which form the valley in whi
the Saxlehner springs are situated.

Original Communications.

PARÆSTHESIA OF THE EXTERNAL FEMORAL REGION.*

BY JOHN C. SHAW, M. D.,
BROOKLYN,
CLINICAL PROFESSOR OF DISEASES OF THE MIND AND NERVOUS SYSTEM
AT THE LONG ISLAND COLLEGE HOSPITAL, ETC.

PARÆSTHESIA of the external portion of the thigh may be present as an isolated symptom, or be a prominent one in a group of symptoms. Up to this time it has been most commonly observed as an isolated symptom. The cases of which I now present histories are only a few of those which I have seen in the last ten years. It is not a very common condition. One of the cases I report has been known to me for at least ten years. Professor Bernhardt, of Berlin, was the first to publish some cases of this kind in the *Neurologisches Centralblatt* of March 15, 1895. About the same time, but a little later, Roth, of Moscow, communicated the histories of some similar cases to a medical society, and later they were embodied in a *brochure* published in Berlin. Freud, Naecke, and Escat have each contributed cases—all published in 1895.

CASE I.—A man, aged in the neighborhood of fifty years. Has always enjoyed good health, and been able to do a good deal of work of a mental character. He is of an active temperament. Appetite has always been good and digestion fair, except when overworked or having much anxiety; then the digestive processes would be slow and imperfect, intestinal fermentation would occur, and the bowels were constipated. He has always been a good sleeper; of a hopeful and not worrying temperament. Extreme cold or sudden changes in temperature were liable to disorder the digestion. He has occasionally had attacks of malarial disease. About ten years ago there were, but have been more especially in the past six years, evidences of a gouty rheumatic condition, which has necessitated care in the diet and the use of axatives. When much exercise can be taken these disrders of digestion do not occur, except at long intervals. Otherwise he is in good health. The abdominal and horacic viscera are healthy. For ten years or more this entleman has at times noticed a disturbance of sensation on the outer side of the right thigh; it makes itself manifest by a painful stinging sensation in the lower nd outer third of the thigh; at these times it is made worse by standing in a constrained position, or y unusually rapid walking. Under these circumances there may be positive pain of a sharp, pricking haracter in this region. Moderately rapid walking has usually not made it worse. These attacks may last for everal weeks and disappear, not to return again for sevral months or a year. Besides this burning sensation here is also a feeling of numbness when the thigh is uched; this extends beyond the pain area; it begins the outer lower third of the thigh and extends r six inches upward, and its breadth is about six inches. does not come within an inch of a line drawn down the centre of the anterior portion of the thigh. There is no disorder of pain or of the temperature sense. The tactile sense is also good, but the quality is impaired. Externally there is no abnormal appearance. On the left thigh there is also a space of about three by two inches, exactly in the same region as on the right thigh, which is the seat of paræsthesia to a slight degree; but it is never painful. There are no other symptoms, and those symptoms detailed are only present when there is a combination of conditions, such as disorders of digestion, gouty symptoms, overwork, or want of proper exercise out of doors.

CASE II.—A man, aged fifty years, of large, powerful build. He enjoyed very good health up to three years ago. He had syphilis twenty-seven years ago, and soon after had an attack of iritis. As a young man he lived freely, took stimulants, and was up late at night. He never became drunk. He has always worked hard, and has built up a large business. His duties compelled him to arise very early in the morning, and sometimes to stay up all night. He leaves his business at 11 A. M. for his home, when he eats, he says, "enough at one meal to serve for three meals." He at once goes to bed, sleeps for four or five hours, and gets up. Three years ago he began to have his present symptoms. He became very nervous, could not sleep, started, and twitched in his legs when he tried to sleep. He was irritable, and had a feeling of difficulty in breathing, and at times palpitation of the heart. He was very dizzy, and often had to hold on to fences when in the street to prevent himself from falling. His bowels were irregular. At about this time he began to notice a burning sensation in his left leg "like fire," or as if a lot of bees had "stung him." This symptom has continued, more or less, ever since. At first this burning was confined to a space of about the size of a fifty-cent piece; to-day it is as large as the palm of the hand. He consulted some physicians, who said his symptoms were due to syphilis, and treated him accordingly. He was very much worried at the idea that the symptoms were syphilitic, because he had a family. Later on, as he did not improve, he was sent to the Hot Springs. There the doctor told him he had syphilis, and gave him iodide of potassium, until he took three hundred grains a day; mercurial inunction was also used, and he was twice salivated. His symptoms continued in spite of this antisyphilitic treatment. A year and a half ago, in addition to the other symptoms, he began to have headache in the left temporal region and over the eye, which was constant, and made him miserable. The burning in the leg became so severe that between the two he was often in agony. If he walked much, which he often had to, the pain in the leg was much increased. There was during all this time a good deal of gas in his stomach and intestines, and his bowels were constipated. He tells me that during a part of the time his pulse was from 30 to 36. After the headache began he often had a feeling of being numb all over and felt heavy. His condition gradually grew worse. Latterly he has been unable to walk properly; his legs are weak and his feet heavy. When this patient consulted me a few weeks ago his facial expression was distressed, his color was pale, and he was irritable. He had considerable difficulty in walking. He appeared unable to lift his legs properly, especially the left one. His pulse was below 50 and labored; artery soft. He has no valvular lesion, the heart appears weak and embarrassed, the sounds are not sharp. The abdominal viscera show no evidence of disease, and there is no gaseous distention of the intestines. The stomach is not dilated. Examination of the legs shows an area of paræsthesia of about two by four inches, rather oval in shape. The painful spot is much smaller, and is confined to the lower portion. There is no disorder of either temperature or tactile sense; the last sense is only changed in quality. I examined this patient again to-day. The distressed facial expression is gone, he is bright and cheerful; the headache has ceased. He walks briskly into my consulting room and says he is a hundred times better than he was. Pulse, 54; less labored.

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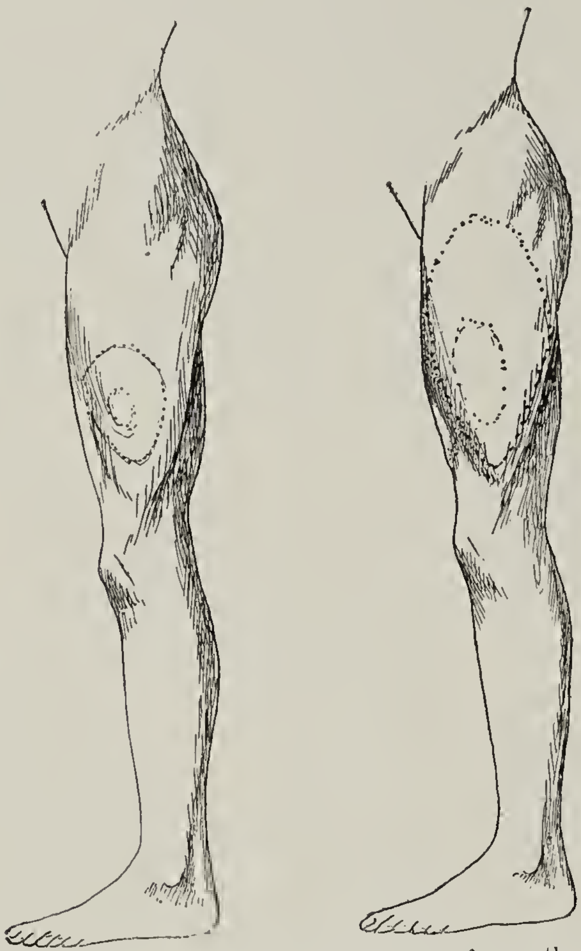
* Read before the Brooklyn Medical Society.



The large space inclosed in the lines represents the area of paræsthesia; the small space inclosed by lines within the larger one represents the area of pain of a stinging, burning character.

Case III.—A lady, thirty-six years old, above average size. She consulted me six years before for some neurasthenic symptoms, from which she recovered entirely. She was then living in the country. Two years ago she married and had a child, now eight months old. She suffers from pain in the back of her neck and disorders of digestion of a moderate character; somewhat constipated; is irritable. She has a burning sensation on the outer side of the left thigh, at about its middle.

Case IV.—A woman, aged sixty years. Complains of a burning sensation on the thigh of the left side. Otherwise apparently well.

All of Bernhardt's cases were in men of middle age. It has been the same for the cases described by the other writers. Two of my own cases are in men, two in women, all in middle life.

Age, then, evidently has a relation to the condition. As a rule only one leg has been affected, but it may be in both. It does not appear to be more common in one leg than in the other. Bernhardt thought the symptoms were due to a degenerative neuritis of the external cutaneous, the nerve which supplies that part of the thigh. He classed among its causes infection and toxic states, such as typhoid and lead poisoning. It may be due to cold, from exposure to draughts of cold air. It has been suggested by others that it is due to compression of the nerve by the fascia, or as it passes out of the pelvis. This appears to me an explanation without a particle of foundation, and yet there is no doubt that standing in an awkward position increases it; but this is only so when the person is suffering from one of the attacks of tingling or burning pain. Roth attributes the compression to disorders of the venous circulation of the nerve. But why should this nerve more than any other suffer from disorder of its circulation? The cases which I have given tend to show that toxæmic states are probably a cause of this condition. In many of the recorded cases—in fact, most of them—there is no decided evidence of nerve disease. It appears to me that the symptoms are brought about by some poisonous, irritating material in the blood or tissues, or both. That it should at one time manifest itself in one nerve is not surprising, for we know how commonly that occurs in other states; take malarial infection, for instance, which so often affects the fifth nerve, or gout manifesting itself in one ankle or one toe in its acute stage; and other instances of a similar kind which you can all call to mind. We have to admit that there must be some special irritability or weakness in the nerve which is thus affected. It does not appear to me that there can be a degenerative neuritis, as suggested by Bernhardt, because the symptoms may disappear.

As to treatment, Bernhardt has recommended massage, electricity, and tepid baths. If one can discover an toxic condition—from lead, uric acid, etc.—the treatmen which will eliminate them should be adopted. Proper attention to the digestive function, regulation of the bow els, dieting, avoidance of stimulants, with baths, are th most useful. If there is a gouty or rheumatic element then some free purgation, followed by alkalies, sodiu salicylate, etc., and a laxative every night, will give relie If there is overwork or anxiety, it should be avoided i possible. Turkish baths with the other treatment wi be of service. The paræsthesia may also be relieved b the use of the electric brush. Moderate and persiste out-of-door exercise should be advised.

RECURRENT PTOSIS.

REPORT OF A CASE, WITH ANÆSTHESIA OF SUPRAORBITAL BRANCH OF T FIFTH CRANIAL NERVE.

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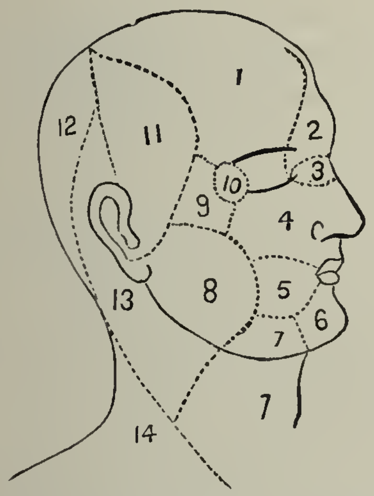
BROOKLYN EYE AND EAR HOSPITAL;
ASSISTANT TO THE PROFESSOR OF DISEASES OF THE MIND AND NERVOUS SYST
LONG ISLAND COLLEGE HOSPITAL, ETC., BROOKLYN.

Katie T., aged eleven years and a half, a bright, telligent, quick-witted schoolgirl, born and reared Brooklyn; with a good negative family history, especia as to syphilis, malaria, rheumatism, and the like; an medical history of attacks of whooping-cough, measles, and chicken-pox, with attacks of headaches at times. One week after school opened this fall (September, 1896) felt headache in the top of her head and over eyes, without nausea, and mother noticed that she did not open her right eye, which was full of water; lids stuck together on awakening in the morning, eye felt sore, and it was thought she had taken cold. Four days later, when Dr. Scott Wood saw her at the Brooklyn Eye and Ear Hospital, he noticed the above-described condition nd also ascertained the loss of sensation of the right suraorbital region without any visual defects, and referred er to the neurological department, where the following onditions were noticed: She is apparently a well-nourshed, intelligent girl, suffering pain in the top of her head nd right eyeball; says sight of that eye is foggy. Right pper eyelid covers upper half of that eyeball. There s no discharge present; lids do not now agglutinate, ut there is loss of tactile and pain sense throughout he right half of the forehead and temporal region covring the distribution of the supraorbital branch of the rifacial nerve of that side. Otherwise she is perfectly ell.



. 1.—The cutaneous nerve distribution of the head. After Flower, but slightly modified. 1, region supplied by the supraorbital branch of the fifth nerve; 2, region supplied by the supratrochlear branch of the fifth nerve; 3, region supplied by the infratrochlear branch of the fifth nerve; 4, region supplied by the infraorbital branch of the fifth nerve; 5, region supplied by the buccal branch of the fifth nerve; 6, region supplied by the mental branch of the fifth nerve; 7, region supplied by the superficial cervical from the cervical plexus; 8, region supplied by the great auricular from the cervical plexus; 9, region supplied by the temporo-malar branch of the fifth nerve; 10, region supplied by the lacrymal branch of the fifth nerve; 11, region supplied by the auriculo-temporal branch of the fifth nerve; 12, region supplied by the great occipital (a spinal nerve); 13, region supplied by the small occipital from the cervical plexus; 14, region supplied by the supraclavicular from the cervical plexus.

The diagnosis of migraine with ptosis and anæsesia of supraorbital branch of the fifth nerve was de and treatment given, first of bromide of sodium, n of arsenic, without apparent benefit, and finally, Dr. John C. Shaw's suggestion, one two-hundredth of rain of aconitine (Duquesnel's), three times a day, ich last caused disappearance of the pain and apparent dual recovery of power over eyelid; so that six weeks er attacks began she could elevate the lid as well as other; sensation had wholly returned; still had slight n in eyeball, but no discharge or sticking, and sight erfectly normal.

The attention of the profession was first called to complaint through the celebrated paper of Saundin the *Lancet* for September 2, 1882, though were not the first cases noticed and reported. In this country Dr. John C. Shaw, of Brooklyn, was the first to report a case of this kind, and he collected all in reach at the time of the publication of his paper, entitled Migraine with Intermittent Ptosis, read before the Medical Society of the State of New York in 1886, and printed in its *Transactions* for that year. The last and most complete article on the subject is that of Dr. P. C. Knapp's, under the title of Recurrent Motor Ocular Paralysis, and published in the *Boston Medical and Surgical Journal*, vol. cxxxi, 1894, page 308, and includes a complete bibliography excepting the case reported by Dr. Shaw, an abstract of which is as follows:

A boy, aged seven years, with a healthy negative family history, suffered from a mild attack of measles when six months old, followed two months later by a swelling of his left eye and drooping of its upper lid, so that the eyeball could only be seen when the lid was lifted; this was recovered from some time after. When two years old he had another attack without pain, and which soon passed off. At five years, another, in which there were attacks of severe recurring pain in the eyeball of a sharp, darting character, lasting about five minutes; he suffered the pain for two weeks, the ptosis two months, and his mother thinks they were due to cold. At six years of age he had another similar attack, but of shorter duration. During his next year he had several attacks of pain, in the last of which the paralysis seems to have continued in a less marked degree than during his previous attacks. He is a stout, healthy looking boy, myopic, with marked paresis of all the muscles supplied by the left third cranial nerve; dilated pupil which reacts very little to light. At this time he suffers no pain, and examination with the ophthalmoscope shows a normal fundus. Two months later he presented himself, suffering severe pain in the temple, but more so in eyeball, for the past two days, attended with nausea and a little vomiting, which we now learn is the character of the beginning of his previous attacks, and the ptosis is more marked than when he was last seen. After two days the pain subsided; the ptosis grew less within a month, but never entirely passed off, and when at rest the eyeball would move out a little, but if he attempted to use the eye the internal rectus would act for a few minutes and then became relaxed.

This is eminently a disease of childhood and youth, as nearly all the cases reported occurred during the first and second decades of life, or the early attacks took place during that time. It occurs equally in males and females, and in the same proportion on either side. There is in some cases a family history of a predisposition to attacks of either trifacial neuralgia or sick headaches, and the symptoms of either one or the other accompany the attacks of ptosis, which comes on early in the attack of pain, but in only a very few cases is there accompanying anæsthesia. The attacks are usually ushered in suddenly, with neuralgic pains or headache, nausea, and vomiting, which may be so slight as to be thought absent; soon after, the paralysis of one or all branches of the motor oculi appears, when all the symptoms except the pain may cease; after a shorter or longer interval (a few days to a few months) it disappears for a time, to be followed after a week's, month's, to a few years' interval by a recurrence. The attacks may be accompanied by photophobia, swelling of lids, catarrhal or purulent discharge, paralysis of the other eye muscles, and, rarest of all, anæsthesia of any or all of the branches of the fifth cranial nerve. This latter symptom, in the five cases (including my own) in which it has occurred, has appeared on the same side as the pain and oculo-motor paralysis; in two cases involving the supraorbital branch of the fifth nerve only; in two cases both that and the infraorbital branch, and in one case all the *sensory* branches of the fifth nerve on the affected side. One, of course, at first naturally suspects syphilis or tumor, but the previous history of attacks, or symptoms accompanying the attacks, with lack of history or other symptoms of either of these diseases and their subsequent non-appearance, especially in the optic nerve, will serve to help differentiate these cases.

The prognosis varies. In some cases the patient has recurring attacks of the same character at varying intervals; in others the severity and frequency increase till in some the trouble becomes permanent, and yet in others the reverse has occurred—namely, less frequency and less severity, or, again, less frequency and more severity. Of course, this will remain the condition while the ætiology remains so obscure as it is and its treatment empirical and unsatisfactory. This consists in the treatment of the attack of neuralgia or migraine with quinine, arsenic, phenacetine, or aconitine; then the paralysis soon after disappears unless, in a later attack, it may become permanent, usually when the patient has come to the years of adult life. In cases which are not typical and obstinate it is well to try antisyphilitic treatment, as they may be due to that diathesis or to commencing tumor.

After discussing the different views Knapp sums up the pathology of this disease as follows: "The most tenable hypothesis is, that recurrent motor-oculi paralysis is due to some vascular change, inflammation, or œdema in a focal lesion, involving the root of the third nerve. As the œdema or exudation subsides, the conducting power of the nerve is wholly or partly restored and the paralysis disappears. In some cases the lesion may involve several nerves or the exudation may affect only a part of the lesion, involving different nerves at different times. As the lesion progresses, it may finally affect the nerve so far as wholly to destroy its conducting power, leading to permanent and total paralysis. The few (three) reported autopsies confirm this hypothesis."

The Tennessee Centennial and International Exposition will open on May 1st and continue for six months in Nashville. The Section of Medical History and Literature is in charge of Dr. Deering J. Roberts, of Nashville (chairman), Dr. G. C. Savage and Dr. S. S. Crockett, of Nashville, Dr. E. S. Miller, of Johnson City, Dr. D. E. Nelson, of Chattanooga, Dr. I. A. McSwain, of Paris, and Dr. T. J. Happel, of Trenton.

OXYGEN
IN THE TREATMENT OF CHLOROSIS.

By JOHN L. CORISH, M. D.,
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CHLOROSIS is a disturbance of the normal ratio which oxygen and iron bear to the other chemical constituents of the red blood-corpuscles, in which these elements become diminished.

An examination of the blood of a chlorotic subject shows that there is a diminution in the amount of hæmoglobin contained in the red blood-corpuscles, also a diminution in the ratio which the white blood-corpuscles bear to the red ones, so that there is a loss not only in quality but also in quantity. These conditions may be brought about—

1. By the withdrawal of food containing iron (digestive disturbances and starvation).
2. Rapid growth of the body, with rapid full development of the organs (puberty).
3. Interference in the proper absorption by the blood of oxygen through disturbance of the respiration.
4. Foreign substances in the air.
5. Wasting diseases.

Each or any of these two causes may result in a temporary condition of anæmia, whereby the ratio of oxyger and iron to the other constituents of the blood are diminished, but the proper ratio may be restored on the resumption of the functions of the organs, together with supply of nutrient material equal to the extra demanc created. But this demand for increased nutrient material has to be met by an increase in the activity of th organ, which renders the nutrition capable of bein assimilated. This results in the particular organ becoming hypertrophied to a certain extent, but when has succeeded in establishing the proper ratio the orga returns to its normal condition, or nearly so. If th organ be subjected to repeated efforts to restore th chemical constituents from a diminished to a norma ratio, the hypertrophy no longer subsides after eac effort, the connective tissue becomes permanently hype trophied, pressing on the parenchymatous tissue, resul ing in atrophy of the latter, thereby rendering the orga incapable of carrying on its normal functions. As th gradual loss of function proceeds, the ratio of oxygen a iron in the corpuscles gradually drops lower and lowe until the stage is reached where four fifths, two thirc or even one half the number of red blood-corpuscles a sufficient to transport the oxygen demanded to the d ferent tissues.

If a cell is not employed to do work, then that c becomes atrophied or disappears. This accounts for t diminution of the number of red blood-corpuscles. percentage of the iron taken into the alimentary ca in combination, in food, or as a medicament, becon acted upon by the juices of the digestive tract and converted into albuminate salts of iron. A corpus can not absorb iron except in the form of an oxide. When a corpuscle relatively poor in oxygen meets iron in the form of an albuminate, it can take up the iron only in proportion to the amount of loose oxygen which that corpuscle contains; therefore, a corpuscle which has to be deprived of all its free oxygen by an extra demand of the tissues with which it comes in contact, will be unable to assimilate any iron whatsoever; so that when a corpuscle has completed its journey it becomes deprived of all its oxygen and part of its iron; then this corpuscle minus its normal amount of iron being sent to the lung, absorbs a less percentage of oxygen than it did before being deprived of the certain amount of iron which has been used by the tissues. The absorption of gas by a luid body is in proportion to the amount of pressure by vhich that gas is applied; the normal atmospheric pres- ure being about fifteen pounds to the square inch, there- ore, the corpuscle can absorb oxygen only to a certain elative degree.

Now, if the pressure of the air in the lung is in- reased half an atmosphere, for example, the corpuscle ill take up fifty per cent. as much more oxygen than nder normal atmospheric pressure. By accomplishing his the amount of oxygen conveyed to the tissues would e more than sufficient for their immediate wants, leav- g a percentage of loose oxygen in the corpuscle. This ose oxygen will enable the corpuscle to restore to its ormal degree the percentage of iron lost. The cor- uscle then becomes in a position, when returned to e lung, to absorb a relatively greater amount of oxy- n than in its previous round with less pressure; so that, ter a number of such trips have been performed, the obule has been nourished to such an extent that it is le to provide iron for itself without the assistance of tra pressure for storing up loose oxygen. This brings e back to the statement that chlorosis is due to the minished power of the corpuscle for absorption of ygen to meet an abnormal demand for the same. This normal demand is made by the organ whose functions ve been disturbed by either of the causes mentioned. lorosis resulting from the impairment of the func- ns of one organ will cause the impairment of the nctions of all others. We sometimes consider a par- ular disease as the cause of chlorosis, but, on fur- r reflection, we can only conclude that the disease he result. I shall consider, for example, disturbances the menstrual functions in conjunction with anæmia. I believe many such disturbances to be secondary the anæmic condition. The ovaries are not provided h sufficient nutrient material in the form of oxygen l iron to properly produce an ovum in a given normal e; the ovum thus generated may be dropped into the rus, either before or after that organ is properly pre- ed for its reception, with the result that the discharge ch takes place will not be of proper quality and quan- . The system of a chlorotic can ill afford to lose the ntity of material discharged during the menstrual period, and in order to preserve all the vital energy possible the sympathetic system shuts down on the production of new ova. These ova remaining in the ovary are improperly nourished, and are aborted before their time, or become atrophied *in situ*, either remaining inactive or to become centres of multilocular cystic tumors.

For some years I had administered iron in one form or another in every case of chlorosis that came under my care. In about fifty per cent. of the cases a decided improvement resulted; some of these still remain permanently cured, although the occupations of the patients were not favorable for such a result. There were other cases in which the improvement was only temporary, and in quite a few the iron treatment was not a benefit at all, but seemed to me to work positive injury. In my opinion the cause of this disease can not possibly be lack of iron in the blood *per se*, as it might be that the cause was inability of the blood to absorb the iron presented. This inability can only be due to the lack of proper material for transforming the iron into an assimilable chemical compound. The amount of iron needed in the circulating fluid for the proper performance of the functions of the same is very small, and is readily contained in the normal amount of food of which we partake. It matters not whether we take the iron in a combined chemical condition in the form of food, or in the same condition in the form of a medicament, only a certain percentage bears certain relations to the demands of the tissues for iron. This demand is exceedingly small.

Chlorosis seems to me to be a disease primarily consisting of loss of oxygen in the blood-corpuscles, thereby rendering them unable to perform their main duty—namely, the distribution of superabundant oxygen to the different tissues. They certainly can not perform that duty without iron, and certainly lose a percentage of iron in the performance of that duty; but the corpuscle itself is capable of renewing the amount of iron used up on account of the superabundance of oxygen which it contains, and which is provided for that purpose. When a demand is created for not only the amount of oxygen which the corpuscle carries for direct combination to the tissues, but also for the oxygen which the corpuscle carries for the purpose of renewing its supply of iron, then that corpuscle becomes deprived of its means of subsistence—namely, the ability to enter into combination with extra iron. If the blood is provided with oxygen more than sufficient to meet the abnormal demand of tissue for an abnormal quantity of oxygen, then the corpuscle is still able to renew or increase its amount of iron. Any means by which the corpuscle might be rendered capable of performing such work would seemingly meet the requirements of the case. Now, can we render the corpuscle capable of carrying the superabundant oxygen? Most assuredly, yes! The application of oxygen under pressure to the circulating fluid through the air vesicles is an accomplished fact. This has been done repeatedly with the production of certain phenomena which can only be explained on the ground that the corpuscles had absorbed a relatively greater quantity of oxygen than they did under normal conditions.

A normal blood-corpuscle, provided with an increased amount of oxygen through extra pressure, is considerably heightened in color; this color—the color of oxyhæmoglobin—is still fairly well maintained after the corpuscle has passed through the capillary circulation and is returned to the venous circulation. Arterial blood passing through a vein would not cause that vein to appear as if it were an artery, because an artery having a muscular coat contains a percentage of oxyhæmoglobin itself that gives a characteristic color to the artery. In operations where oxygen has been administered in conjunction with ether the hæmorrhage from veins and from arteries is more difficult to distinguish by the color, there being more oxygen in combination than is actually required by the tissues. Again, where oxygen inhalation under pressure has been carried in the human subject to the point of saturation and the respiratory movements have been rendered inactive, the subject maintains a general diffuse, rosy appearance on all parts of the integument. This is due in part to the heightening of the color in the blood-vessels and also to the heightening of the coloring matter of the muscles.

I reason from this that if an anæmic is provided with oxygen inhalation under pressure, the circulating fluid will compensate the tissues more than sufficiently in their demand for oxygen, and will be able to render the fluid capable of absorbing iron salts to its fullest extent. Another point which I desire to mention is that the plasma of the blood, being an alkaline fluid, will certainly absorb a quantity of oxygen when it has been presented under pressure. This oxygen is gradually released from the plasma as the latter proceeds farther away from the lungs. The oxygen normally held in solution in the blood-corpuscle is imbibed by that body while in the lung. The circulating fluid in the lung is subject only to the pressure of the right ventricle, but when it returns to the heart charged with oxygen, it then becomes subject to the greater pressure of the left ventricle, which pressure, though gradually decreasing during transmission to the capillaries, is still sufficient to hold the oxygen in confinement until it reaches its destination.

I come now to the presentation of some facts which, when compared with the physiological ideas presented above, seem to me to be correlative. The following case was to me one of extreme interest:

Maria B., aged thirty-four years; Italian; married. Family history good. Has had three miscarriages and four children at full term. Only the first child, aged twelve years, is living. The other three children died before they were fifteen days old. Her surroundings are extremely unsanitary. She is now (July 21st) pregnant for the last eight months. She is decidedly anæmic and short of breath. There are a mitral cardiac murmur and œdema of both legs below the knees. She came to me complaining of cephalalgia. The husband tells me that each of the three children who died were pale when born, and suffered from gastric disturbances up to the time of their death. Also that the mother was very pale for two months before each confinement, except the first, and that she nursed all the children, nothing but the natural milk supply being used. I placed the patient on pepto-mangan and rare-meat diet, and advised exercise in the open air. Oxygen inhalations were advised, but the patient would not consent. I saw her frequently during the next thirty days.

On August 16th, at 3 P. M., I made digital examination, she complaining of labor pains. The os was soft, and I could get no uterine contraction. I remained with her till four o'clock, and there being no improvement in the character or result of the pains, which were light, I left her. At 5 P. M. I returned and found her delivered of a male child—weight, six pounds. The midwife stated that the child had been born at 4.20 P. M. The post-partum hæmorrhage was slight and of a thin character, and not inclined to clot. The after-flow stopped completely on the third day. An examination (bimanual) showed no organic uterine disease.

The pepto-mangan was continued, and the patient now, September 30th, is about and in good health, the anæmia having disappeared together with the cephalalgia, cardiac murmur, etc.

The child's appearance at birth was pale and il nourished. Its respiration on the second day was 4 in a minute. Temperature, 95.2°. The mother's mil was analyzed and found to contain but 0.50 per cent of fat and 1.50 per cent. of albuminoids. The child wa placed on a modified milk diet according to the schedul of Professor Rotch. This seemed to suffice, the onl symptom being constipation. The fæces contained large amount of undigested cheese. Accordingly th percentage of albuminoids was reduced with benefit.

On the fifth day the child's fingers and toes becam œdematous. Spirit of nitre was administered and th swelling subsided, but beneath the finger and toe nail patches of purulent material appeared. Pus was als present in the urine. The child became more emaciate the patches extended upward to the wrist and ankle and the child died on August 24th, aged eight days.

I deduce from this case that the mother had bee called upon for a supply of a certain element for th nourishment of the fœtus, and that in complying wit this demand she had left herself without sufficient of th element to carry on the normal function of the diffe ent organs. Now, what element in the blood if dimi ished would produce such a train of circumstance Oxygen alone. If it was iron alone, the patient wou not recover so quickly after each parturition, and t child would never have gone to full term. The moth was always capable of eliminating the CO_2, both for h self and fœtus, otherwise she would have aborted. T fœtus demanded a certain amount of oxygen, and ga up in return a certain amount of CO_2, which t mother was able to dispose of. But she was la ing in one capacity, and that was the supplying of greater demand for oxygen which was required by the fœtus.

The egg of a fowl contains no free oxygen, but during the process of incubation it absorbs oxygen when heated to a favorable degree, which is that of the temperature of the hen. There is no extra demand for oxygen which the hen is to supply, but it supplies the means by which oxygen penetrates the shell.

In the human being, the mother supplies all the oxygen needed for the ovum *ab initio*. If this supply is less than the demand, then the process of development is interfered with. In the ovum of a fowl, if this supply of oxygen is interrupted for any length of time greater than the interval between which the hen hatches, the process of transformation is stopped, and if this stoppage lasts sufficiently long then a change results whereby the oxygen imbibed, so to say, enters into a chemical union with other elements present, and the process of development is stayed from that time on.

The following cases were treated by me at the patients' homes and at my office:

Case I.—Miss A. C., aged twenty-two years; single. Family history negative. Had begun to menstruate at fourteen years, and was regular up to fourteen months ago. She then noticed that the flow was paler and lasted during three days. For the two months following the catamenial discharge was absent altogether. At varyng intervals the discharge appeared, but was of a thin, erous character. She did not complain of any headache. There were no digestive disturbances except loss f appetite. Her color was very pale, her respiration apid (cardiac palpitation), and she complained of tiredness on the least exertion. There were no organic uterine disturbances or nervous phenomena. Murmur located at aortic orifice. She had been treated by various physicians for chlorosis. Iron in many forms and combinations had been prescribed, with partial improvement, only to be followed by a relapse on discontinuance. I put her on Blaud's pills for two weeks, and on pepto-mangan for two weeks more. The menstrual flow for anuary was scanty. I then continued the pepto-mangan, and, in addition, gave inhalations of oxygen ompound (Walton), at half an atmosphere pressure, hree times a day. In a week's time the improvement as marked. The respiratory movements were reduced twenty; the aortic murmur was very faint; appetite creased, and the patient expressed a willingness to ndertake outdoor exercise. I continued the treatment epto-mangan and oxygen inhalations) for three weeks ore, during which time she had a menstrual flow lastng four days, which was of a bright crimson color, and peared especially so at the time synchronous with the xygen-compound inhalation. The patient was married hortly afterward, and is in a fair way toward the cares motherhood.

Case II.—Miss A., aged twenty-six years, a recluse. amily history good. Began to menstruate at fifteen ars. Has been regular up to a year ago. Since then periods come on about every three weeks. The flow scanty and of a serous character. She has had several acks of intermittent fever. She is pale and complains shortness of breath, occasional attacks of nausea and niting, headache and dizziness. On examination, she shows a mitral murmur. There is a slight catarrhal endometritis. There are no nervous symptoms.

Iron preparations were administered during the following two weeks, but when they were not vomited they increased the digestive disturbances so that I had to resort to arsenic, which was better borne. In the meantime the uterus had been curetted and treated with iodine. At the end of three weeks there had been but slight improvement. I discontinued the arsenic treatment and substituted inhalations of oxygen compound (Walton) three times a day. This was well borne, and in the beginning the patient felt a sense of relief during respiration. In her own words, "it seemed to lift a weight from my chest." In two weeks' time the improvement was marked. The color of the integument was normal. The mitral murmur had disappeared, the appetite was fairly good. There was absence of vomiting with slight nausea. The menstrual period occurred after an interval of twenty-five days. The quantity was materially increased and color improved. The oxygen treatment was continued for two months longer, the patient coming to my office and administering the inhalations herself. The following menstrual period was twenty-six days and the next twenty-eight days. The patient is now well and strong, and with the exception of dieting and suitable out-door exercise no other treatment is being carried out.

Case III.—Miss E., aged thirty-eight years; occupation, teaching. Family history: Father died of pneumonia; one sister died of consumption; has had three attacks of pneumonia and several pleuritic attacks. She came to me in March, 1896, complaining of severe cough and pain over the apex of the right lung anteriorly. She had been losing flesh and strength, and her voice had given out under her arduous duties. She complained of shortness of breath, palpitation, and restlessness at night; also night sweats and muscular pains in the calves. Menstruation irregular and scanty. There was no cardiac murmur. The patient was very chlorotic. Respiration, 28, with friction sounds at the apex and posteriorly on the right side. There were mucous râles also. Pulse, 96; temperature, 99° F. in the morning, with an evening rise to 100° or 100.4° F. She had been taking cod-liver oil and iron throughout the winter under a physician's orders. These I discontinued. I immediately put her on creosotol, fifteen minims in the white of an egg, three times a day. This was not well borne for the first week, but I was soon able to administer as much as half a drachm thrice daily. The cough became less and less troublesome, the night sweats were no longer present, and the vesicles soon became fairly well cleared of mucus. Still, the extreme pallor was present. There was no improvement in the menstrual flow. The rate of respiration improved, but not sufficient, in my judgment, with the rate of improvement of the lungs. Fever subsided. I therefore had recourse to oxygen inhalations, three times a day, in addition to the creosotol. Throughout a course of eight weeks this was administered, with the following results:

July 1, 1896.—The cough is entirely absent; no expectoration; respiration averages 20 to a minute; vocal ability improved. Color normal. Menstrual flow for May, three days' duration, and for June, five days' duration. Appetite returned. Severe pain in pharynx. Probable laryngeal neuralgia. Patient left for Sullivan County, New York, for vacation.

September 30th.—Patient writes me that she still maintains her improved condition, and that her catamenia are normal.

In Case I, the patient had been living in an extremely ill-ventilated house, with damp cellar, and with a privy vault just beneath the window of the sleeping apartment. Her food was insufficiently prepared, and her work was of the restricted house variety. She seldom took outdoor exercise.

Cases II and III are samples of a secluded life, broken rest, hard work, teaching in an ill-ventilated, overcrowded school. Here also the diet was restricted, and, in my opinion, insufficient for the needs of a person subject to prolonged physical and mental strain. Case III was suspected of being possessed of pulmonary phthisis, and it was only after the pulmonary catarrhal symptoms had subsided that the case showed up as being one also complicated by anæmia.

Complicated cases of phthisis and true chlorosis are the most grave, for the reason that the chance of improvement in the tuberculous disease is materially decreased, on account of the inability of the blood of the chlorotic to carry sufficient nutriment to the diseased parts. The only real element in the differential diagnosis between chlorosis and incipient phthisis is the percentage of hæmoglobin. In tuberculosis the percentage of hæmoglobin seldom falls below nine per cent., while in chlorosis it may fall to six, five, or four per cent.

In a chlorotic subject where we have no respiratory symptoms, no expectoration, and no tuberculous bacilli found on examination, the case is one of uncomplicated chlorosis, but, where these occur and the percentage of hæmoglobin is below nine per cent., we must not overlook the fact that our phthisical patient may also be a chlorotic. Such was the case with Case III, and I believe, had I recognized this state of affairs in the beginning, I would have reached a better result, and in less space of time, by administering the oxygen inhalations for the anæmia immediately. I would also have had a local beneficial effect on the phthisical process. I will reserve this point for future discussion.

We all know how beneficial outdoor exercise is to the patient suffering from chlorosis, but in half of these cases the patients are unable to take sufficient exercise to be of any benefit. I have had an anæmic come to my office, after a walk of half a mile, utterly tired out. After a slight rest, I have administered from three to five deep oxygen inhalations, and the patient would start for home. In every case the patients would state to me on the following morning that they felt less tired from their journey home than from the journey to my office. In fact, they would return home in a roundabout way, covering more ground and obtaining additional benefit thereby. The muscles contain hæmoglobin, and unless they receive sufficient oxygen are soon rendered incapable of prolonged effort.

I no longer use iron in the treatment of every case of chlorosis. In cases where there is nervous excitement or the digestive functions are impaired, iron should not be used at all, for in these cases the above conditions become aggravated. Arsenic can advantageously replace the iron treatment. Arsenic and oxygen have in many cases in my practice effected cures in cases which had resisted treatment with various preparations of iron. I consider oxygen to be one element necessary to place the chlorotic on a firm foundation for subsequent improvement. Iron, arsenic, etc., are secondary, and should be administered sparingly. Experiments in the administration of oxygen in the treatment of diseases have been carried at varying times during this century. The results obtained were in many cases doubtful, and in some others functional disturbances were recorded. In the former I do not think that the gas has been administered with extra pressure. There has always been a dread of doing injury by giving too much oxygen. You can not give too much, as I have explained in a previous article (*Medical Record*, September 12, 1896). If you wish to fill a vessel with a leak in it, you must fill it with a stream which is of greater dimension than the leak.

Then, again, oxygen should be diluted for purposes of inhalation. What more natural than that the diluted gas should be the one indicated by Nature—viz., nitrogen?

In cases where functional disturbances have resulted, these were due to impurities in the gas, such as chlorine, and the symptoms described in the results of the older experimenters, Du Marquay, Beddoes, *et al.*, certainly point to this as the cause.

Ninety-second Street and Third Avenue.

ALBUMIN IN THE URINE.

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Probably no other aid to diagnosis is so regularly and systematically called into use by the careful physician as the examination of the urine.

Indeed, until recently, and before analyses of the blood, sputum, gastric contents, and fæces were shown to throw so much light upon obscure cases, the painstaking doctor felt that he had made use of all means at his disposal to arrive at a sensible conclusion when the urine had been examined. The technique and routine which are most generally pursued by the busy practitioner who undertakes to make this analysis resolve themselves into an examination for the presence of albumin and sugar. This technique, rarely strengthened as i is by a microscopical examination of the specimen, o even by a chemical estimate of the other ingredient of the urine, is open to so many objections and criticisms, and the tests which are ordinarily employed a often so misleading and unsatisfactory, that the wis conclusions which might be drawn from the establishment of the presence or absence of albumin in a given specimen are materially modified. These facts have prompted me to write this paper on Albumin in the Urine. It is my purpose to review briefly the subject of albumin and its origin, and to suggest some changes in the course which is in vogue in urine analysis. Sight must not be lost of the fact that the origin of albumin in the urine may be intrarenal or extrarenal, and if intrarenal, it may be due to any one of three or more possible causes:

First, the structure of the kidney may be so changed by inflammatory processes, or by degeneration, as to permit of the escape of albumin through the thin vascular walls and tubular basement membranes. The presence of albumin in the urine in those diseases which are commonly grouped under the generic name of Bright's disease has its origin in such structural renal change. Albuminuria may, however, be much less serious and of much less import where either the second or third cause is operating.

Second, circulatory disturbances which bring about increased tension in the renal vessels may occasion albumin in the urine. If such circulatory disturbances are kept up long, changes in the renal structure finally follow. Organic heart disease, prolonged external cold and chilling of the surface of the body, physical exercise and fatigue, and disturbances of the vasomotor system, may occasion an increased tension of the renal vessels and thus bring about albuminuria.

Third, hæmatogenic origin. The blood may be so altered in its constitution as to permit the albumin, which ordinarily is not osmotic, to dialyze through the animal membranes of the vessel walls, and pass into the volume of the urine. This is noted at times in cachectic individuals whose kidneys are not the subject of any change. And following the ingestion of chemical agents whose effect is to alter the blood, albumin is almost invariably present. This, then, would suggest how essential it is to go further than a simple albumin estimation, and look for renal derivatives—casts, epithelium, etc.—under the microscope, and in fact is a plea for a blood and sputum analysis in conjunction with the urine examination before mistaking a possible anæmia, pure and simple, or an anæmia due to a tuberculosis, for a morbus Brightii. Nor should the albuminuria of extrarenal origin permit us to go astray. t must not be forgotten that urine may leave the kidey free from albumin and be contaminated before it s voided. Such contamination follows when there is resent anywhere along the tract of the escaping urine n inflammatory area, whether this is in the pelvis of he kidney, in the ureter, in the bladder, or in the rethra, while urine contaminated with blood, blood coloring matter, fibrin, pus, etc., will surely deceive hose whose only task is to find albumin. At the same me, it is necessary to observe still greater care that substances which give reactions similar to those of serum albumin be not mistaken for it—in other words, it is absolutely necessary, when an albumin reaction has been obtained, to determine if such reaction be not due to albumose, to nucleo-albumin, to mucin, to pine acids (oleo-resins), to egg albumin, to hæmoglobin, to peptone, to alkaloids, to urates, phosphates, etc. After having satisfied ourselves that it is really serum albumin which is present, it is, as a rule, not very difficult to locate the source and cause of the albuminuria, and to this end the microscopical analysis is absolutely necessary. Such an analysis establishes not only the presence or absence of renal derivatives, but of derivatives of the entire urinary tract, from kidney pelvis to meatus urinarius. It shows also any crystals which may be present, and thus offers to us much more satisfactory data from which to derive conclusions and arrive at a sensible diagnosis than is possible even from an exhaustive chemical analysis. No analysis of the urine is, in my opinion, complete unless it is associated with a microscopical examination, and it has long been a question in my mind why life insurance companies continue to lay so much stress upon the chemical analysis of the urine, and upon albumin, and why they have not long since seen fit to require a careful microscopical report. What right has the examining physician to write a "Yes" after the question "Albumin?" in an insurance application, and thus deny the applicant the privilege of insurance, without modifying it by stating the origin and cause of the albuminuria? This, of course, is impossible unless the examiner looks at the sediment under the microscope. Then, again, I am prone to believe that insurance companies often suffer losses where the examining physician, failing to find albumin, overlooks "a chronic interstitial nephritis." It is a well-known fact that in this form of Bright's disease albumin is often wanting from time to time, and not a few such cases run their entire course, until death ends the chapter, never showing any albuminuria. A microscopical analysis would most likely show such renal derivatives as to make the case suspicious, or at least prompt the doctor to inquire more carefully into the applicant's general condition.

There is no doubt in my mind that in both hospital and private practice, with the present technique and course in urine analysis, errors are constantly being made—that is to say, albumin is being found when it is really not present, and when more reliable tests would prove such albumin to be albumose, mucin, etc. The trouble is, and has been, that with some one of the regular tests—such as the heat test or the nitric-acid test—an albumin reaction is obtained, and the examiner, aside from probably eliminating any possibility of the reaction being due to phosphates or urates, does not take the pains to differentiate the ring or precipitate from an analogous ring or precipitate due to mucin, to alkaloids, or probably to a pine acid, in the specimen, any one of which may be the ingredient of a perfectly normal urine.

This is no argument for a more delicate or more sensitive test. The very delicate tests are apt to be sensitive at the expense of trustworthiness, and it is not sensitiveness which is now needed; albumin, or at least a reaction analogous to that of albumin, has been obtained, and it is only necessary to demonstrate if it is really serum albumin, or if the reaction is due to some other ingredient. Now, for this purpose the time-honored heat test and nitric-acid test are not sufficient. Either of them are most excellent tests, there is no doubt of that, but before pronouncing a reaction to be due to serum albumin other trustworthy corroborative tests must be used, and performed in such a manner as to react to albumin and to albumin alone. Such a trustworthy test is the "acetic-acid-ferrocyanide-of-potassium test," and it should be invariably used in every urine examination. After having found albumin with any one of the ordinary tests, this test should be invariably employed. My plan in urine analysis is as follows: I first employ the heat test and then the nitric-acid test. If albumin is found, I then verify it with the ferrocyanide-of-potassium test. If no albumin reaction is obtained by the heat test and the nitric-acid test, I have recourse to one of the more sensitive tests—as a rule, to the "potassio-mercuric-iodide test," which, in my estimation, is the most sensitive test known. It might be asked, Why is not the heat test, verified by the nitric-acid test, sufficient? I will answer this by saying that the heat test, when employed alone, will not precipitate a possible alkali albumin that may be present, and always precipitates the phosphates (if the urine is neutral or alkaline); and when, as is usually the case, it is employed by first acidulating the urine with a few drops of nitric or acetic acid, albumin, which may be present in a small percentage, is likely to have been rendered acid, and, as we know, acid albumin can not be precipitated by heat. On the other hand, when a considerable percentage of phosphates is present, and not enough acid is added to neutralize all these phosphates, the contained albumin is likely to be alkali albumin, and, as we know, alkali albumin can not be precipitated by heat. Not only is it impossible to estimate, in advance, just how much acid should be added, but when the test is performed in this manner any mucin which may be present is precipitated, and thus renders the diagnosis less certain, while albumose makes us additionally less certain by appearing as soon as the specimen begins to cool. With Heller's nitric-acid test other difficulties beset us. Not only does albumin respond to this test, but the urates, mucin, albumose, the pine acids (oleo-resins), and globulin give results quite analogous, and, unless the examiner stops to think that the patient may be taking cubebs or copaiba for an existing bronchitis, he may fail to exclude the oleo-resins (pine acids) which appear in the urine when these remedies are given. With the "acetic-acid-ferrocyanide-of-potassium test" these difficulties are obviated, and when applied in the proper manner nothing but albumin reacts to the test, the phosphates, urates, peptones, vegetable alkaloids, and oleo-resins not in the least obscuring the result, because they do not react to the test. It is necessary, though, to thoroughly mix the acetic acid and solution of ferrocyanide of potassium used in the test before adding the urine, as it is the potassium salt which prevents the contained mucin from precipitating. Professor Purdy, on this same principle, has devised an acetic-acid-sodium-chloride test, the latter ingredient preventing the precipitation of the mucin. Finally, it is well to remember that high authorities in urine analysis have seen fit to establish a class of physiological albuminurias, and, while warning against including too many cases in this class, and suggesting that now and then one of such cases may prove later to be a morbus Brightii, maintain that some of them are really physiological, at least functional, albuminurias. With them, it behooves us, nevertheless, to be on our guard, both in diagnosis and prognosis.

In conclusion, I might add that the two salient points of my article, and the ones I wish more especially to emphasize, are: First, that more care be exercised in testing for albumin; and, second, that a microscopical analysis accompany every chemical one.

323 WEST WALNUT STREET.

THE
SERUM TREATMENT OF DIPHTHERIA.*

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In presenting the subject of the serum treatment of diphtheria I do not expect to bring anything new before you, but rather to profit from an expression of your opinions, your treatment, and your methods of handling this most virulent disease. I fully realize that the conclusions I shall present to you concerning the antitoxine treatment of diphtheria are contrary to the views and statistics of several eminent clinicians. The value of the serum treatment, however, must be decided not on theoretical but on clinical grounds, and more work must be given to the study of the effects in single cases than to the mere figures of the recoveries. I have seen good results and recovery follow in cases treated by antitoxine that in my former experiences would have been considered fatal.

Diphtheria is an acute, virulent, infectious, and contagious disease, with both local and systemic manifestations. Bacteriologists now consider it proved that true diphtheria depends upon the Klebs-Loeffler bacilli, and that the membranous inflammation from which the Klebs-Loeffler bacilli are absent are not true diphtheria. The clinicians, however, can hardly exclude from the term diphtheria a class of cases with a membranous inflammation, which exhibit the clinical picture of diphtheria even if the Klebs-Loeffler bacilli are not found. The studies on the virulence of the bacilli have shown that the genuine bacilli may possess almost all grades in the degree of virulence, but that the absence of or diminution in virulence can hardly serve to distinguish varieties which are otherwise alike.

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According to Roux, attenuated varieties of the diphtheria bacilli may be obtained by cultivating them at a temperature of about 40° C. in a current of air, and this author suggests that a similar attenuation of pathogenic power may occur in the fauces of convalescents from the disease, and possibly the non-virulent pathogenic bacilli, which have been described by various investigators, have originated in this way and are the true diphtheria bacilli.

The same author says it is possible to commence with virulent bacilli of diphtheria and to obtain artificially bacilli without virulence quite similar to the attenuated bacilli which are obtained from a benign case of diphtheria, or even from the mouth of persons in good health. It is also possible to take an attenuated culture, inoculate a very susceptible animal, then a less susceptible one, and finally an immune one, and so increase the virulence of the culture.

The poison of diphtheria has been isolated from the cultures of diphtheria bacilli, and is found to belong not to the crystallizable ptomaines but to the albumins—toxalbumin. And the same result is produced on the economy with this toxalbumin which follows the inoculation with the bacilli themselves, except, perhaps, the production of the membrane.

The toxic substance of diphtheria contained in diph-heria cultures is destroyed by a temperature of 60° C., s soluble in water, insoluble in alcohol, and is not dialy-able.

There is practically no difference in virulence be-ween the bacilli derived from severe and those from mild ases of diphtheria when tested by inoculation.

Sternberg believes there are two forms of bacilli of iphtheria. The more common is distinguished by being more or less segmented rod, with intensely stained nds, with perhaps one or two sharply defined, intensely tained areas between, the other longer and more seg-iented, often contracted at the middle, with ends vollen.

In a certain number of cases diphtheria bacilli have een found in the blood and internal organs of indi-duals dead of the disease; but all that has been learned om careful study of the secondary manifestations of phtheria tends to the opinion that they are in no way ependent upon the immediate presence of the bacilli, id that the occasional appearance of diphtheria bacilli in internal organs is in all probability accidental and unimportant.

The bacilli are usually found in abundance in the membrane and the œdema about it. The farther from the local membrane the less frequent the bacilli are found. In general, it is considered that the more recently the germ comes from a developed case of the disease the more virulent it is, and the longer it has been cultivated outside the animal body the more attenuated is its pathogenic power.

Abel says he has found virulent diphtheria bacilli sixty days after all clinical phenomena had disappeared in a case of nasal diphtheria, and that there was no more marked systemic symptom than with an ordinary coryza.

To establish a diagnosis of true diphtheria it is necessary to determine the organism. Many times this is done from a piece of the membrane (which will invariably show streptococci, as well as the Klebs-Loeffler bacilli) by teasing, staining, etc.; but it is well to verify the examination of the membrane by a culture, which can be done in from twelve to twenty-four hours.

To do this, one should have a sterile culture tube of blood serum, a sterile swab to brush over the membrane, and to then infect the culture tube, and an incubator, or some other means of keeping the infected serum tube at 102° to 104° F. from twelve to twenty-four hours. At the end of that time the colony is usually patent to the eye; then with a sterile platinum wire obtain some of the colony of bacteria and tease it in a drop of water on a cover glass, dry, then fix with heat, stain with alkaline methyl blue, bleach and dehydrate, and it is ready for mounting. These cultures are of the greatest practical importance for determining the presence or absence of the diphtheria bacilli in the membrane of the throat. Many cases not commonly considered diphtheria, on account of the mild clinical phenomena, have been proved to be true virulent diphtheria instead of a benign angina. When they are so identified one is more cautious and can prevent spreading the disease. By these cultures the quarantine is regulated in many of our cities.

Experimenters say old cultures are less virulent than fresh ones, but when replanted in a fresh culture medium they manifest their original virulence.

One can not expect to cure every case of diphtheria with antitoxine, yet I believe, from my experience, that with a sufficient dose recovery will follow in most cases of recent uncomplicated diphtheria; also that the serum treatment should be used even in the late cases. We must admit that the exact source and method of the production of antitoxine in the animal body and its mode of action is still undetermined, and for the present we must be satisfied with the clinical knowledge that in some way the so-called antitoxine which has been found to be present in the blood serum of immune animals protects these animals from infection by pathogenic bacteria, and that when transferred to susceptible animals they confer upon them a temporary immunity, or if introduced after the infection may neutralize the pathogenic action of the toxines produced.

The excess of antitoxine is found in the blood serum of an immune animal, and on this depends the theory of blood-serum therapy. The horse has been chosen as the animal to develop the antitoxine serum, because it has been found that even in large quantities the plain horse serum is harmless to man, and because of the great amount of antitoxine it can produce.

If the antitoxine serum is mixed with a culture containing the toxine it renders the latter inert, an injection of the mixture into an animal producing no result. In this way the antitoxine strength is determined.

Ehrlich fixed the immunizing unit by taking 0.1 cubic centimetre of antitoxine serum with 0.9 cubic centimetre of normal toxines and injecting all into a guinea-pig without result. If the antitoxine and toxines are injected respectively, then no result, and the same if the antitoxine first; but if the toxine is given first, then the antitoxine must be increased, and similar results were obtained when cultures of the living bacilli were injected.

Another point is, that animals artificially immunized against one infection seem to become more susceptible to others; which may explain the streptococcus pneumonias observed in diphtheria treated with antitoxine.

Karlinski, as a result of a series of experiments on himself, concludes that antitoxine serum influences in no way the metabolism of a healthy organism, and that the albuminuria in diphtheria cases, treated with antitoxine, should be ascribed to the disease rather than to the remedy. Osler and others agree with him on this point. Antitoxine, it is said, is excreted by the urine, and immunity depending upon it ceases when all is eliminated. The larger the total dose the greater the immunity.

Immunity from disease is both natural and acquired. Acquired immunity depends upon the development in the blood of a neutralizing substance probably related to the nuclei; and it is of importance to remember that antitoxine is a new substance, which does not occur in the blood of normal animals, and is a little less complete and not so permanent as natural immunity; for in the latter it is only when the functions of the individual are disturbed or his vitality depressed that the resistance is lost, while in the former time seems to lessen the power of resistance; so that rubeola and scarlatina may return in a few months or years, while for protection from variola one requires to be vaccinated at varying periods.

Animals are either immune or susceptible. The essential difference between a susceptible and an immune animal depends upon the fact that, in one, the pathogenic germ when introduced invades the tissues or the blood by reason of its nutritive requirements, the toxines produce changes in the tissues and fluids of the body inconsistent with the vital requirements of the infected animal; while in the immune animal multiplication is not so great or does not occur, and is restricted to local infections of limited extent, and after a time the resources of Nature suffice to control the infection. It may be that the true explanation of the immunity afforded by a mild attack of an infectious germ disease is to be found in an acquired tolerance to the action of a chemical poison produced by the micro-organism, as one acquires a tolerance for toxic and deadly drugs.

Nissen found that freshly drawn rabbits' blood was immune against a limited number of cholera spirilla, and killed them in from ten to forty minutes, but when the number exceeded twelve hundred thousand to the cubic centimetre an increase in the bacteria occurred in twelve hours. There is also no doubt but that the leucocytes play an important part in the protection of the individual against infection by pathogenic bacteria. When pathogenic bacteria are introduced into the tissues of an immune animal migration of the leucocyte to the point of infection far exceeds that which occurs in one which has not a natural or acquired immunity for the organism. The more the body and elements are injured the more successful the inroads of bacteria, and hence the more prolific the toxine production and severe the disease. There are a good many theories. Perhaps the most popular one is that of phagocytosis, propounded by Metchnikoff; and to this there are exceptions taken by those making a study of the same.

Buchanan teaches that it is the blood serum that causes the destruction of pathogenic diphtheria, and not the phagocytes; which Sternberg says, in the *American Journal of the Medical Sciences*, in 1881, that immunity depends on acquired tolerance to the toxic products of pathogenic bacteria.

The more virulent the bacteria the less ready the leucocytes are to seize them. The more immune the animal the greater is the affinity of the leucocyte for the bacteria. Then, also, the leucocytes are said to have a special preference for a particular bacterium in a mixed infection; as, for instance, in a case where there are both streptococci and Klebs-Loeffler bacilli, they prefer the bacilli.

Antitoxine is obtained by inoculating a healthy horse with 0.5 cubic centimetre of a filtered culture of diphtheria bacilli developed in the cultures of diphtheria bacilli after several weeks in a slightly alkaline bouillon with a little salt at a temperature of 37° C. At the end of thirty days the cultures are passed through a Chamberland porcelain filter (the product is so toxic that 0.1 cubic centimetre will kill a guinea-pig of five hundred grammes in forty-eight hours). The first day one cubic centimetre is injected, and so gradually increasing the quantity until on the eightieth day two hundred and fifty cubic centimetres are used. When the process is first started there are both a local and a systemic reaction, but they gradually cease, and finally two hundred and fifty cubic centimetres of toxine only produce a local œdema. A curious fact in this process is, that at the end of the second month, when fifty or sixty cubic centimetres of toxine are being used without discomfort, the blood of the animal will be found to contain but little of the antitoxine. The antitoxine only appears after repeated doses of toxines. The strength of the serum is tested with young guinea-pigs of five hundred grammes. One gramme of serum will protect fifty thousand grammes of guinea-pig from a fresh virulent culture of the bacillus diphtheria.

It can be increased to double that strength if intravenous injections are used instead of intracellular in its production. Six to eight litres of blood can be taken from a horse, but usually only three are drawn. It is obtained from the jugular vein by making a small cannula; it is then allowed to stand twenty-four hours in an ice chest for the serum to separate.

It is patent that if one is to obtain results from the use of antitoxine the product must be thoroughly reliable. I will read briefly the notes of several cases.

Case I.—C. M. G., three years old, colored, was attacked on May 5th. I saw him first on May 9th. He had had no physician or treatment. The child presented a clinical picture of malignant diphtheria.

The arch of the palate, the anterior surface of the tonsils and posterior wall of the pharynx, and the nares, were covered with a thick, grayish-black membrane. There was a fœtid, acrid discharge from the nares, and he had had nosebleed.

The glands were swollen; the temperature was 104° F.; pulse, 150; respiration, 30. There was the peculiar characteristic foul odor met with in cases of diphtheria. The child was dressed and in the mother's lap, where the little fellow had been for two days, completely prostrated. The parent said the child had been unable to swallow for the past twenty-four hours. Bowels moved that morning.

I requested Dr. Inlay to see the child, as it was my irst experience with antitoxine. We injected fifteen ubic centimetres of Behring's antitoxine; gave the child vhisky and milk by the rectum every four hours; the auces and nose were sprayed with hydrogen peroxide very two hours, full strength.

I saw the child at 9 P. M; he certainly seemed easier; emperature, 103°; pulse, 100; appearance of the throat he same.

May 10th, 10 A. M.—The child is positively better; reathes easier, though still with great effort. Temerature, 102°; pulse, 120.

9 P. M.—Used second dose of antitoxine. Child now ble to swallow. Takes his milk and whisky by the omach.

11th.—The little fellow sat up in bed playing. He ad just eaten some oatmeal and milk; throat clear of ie large, thick membranes. Mother said he had had emorrhage from the nose.

13th.—Throat and nose clean.

15th.—Child's feet and legs swollen, and presents mptoms of acute nephritis. One per cent. albumin the urine with casts. My notes do not specify the rt.

June 15th.—Child better of the nephritis; well-arked multiple neuritis, with paralysis of both legs, one arm, and muscles of deglutition. Child can hardly swallow.

26th.—Child taken to St. Christina Home.

September 15th.—Child returned to his mother from St. Christina, apparently well of the nephritis and neuritis. August, 1896, I saw the little fellow, and he is as rugged and healthy as one could wish.

Case II.—L. M. G., aged five years, sister of the last patient. Came down with a sore throat; characteristic patch on both tonsils; temperature, 103.5°; pulse, 124. I gave her sixteen cubic centimetres of Behring's antitoxine.

May 12th.—Patient has been very comfortable for the last forty-eight hours. Membrane is thinner and soreness has subsided.

13th.—Membrane all gone. We used peroxide of hydrogen in throat locally during illness.

Case III.—V. M., aged eighteen months, colored baby, came down with high fever, sore throat, dry skin, and has appearance of a very sick child. On the tonsils and posterior larynx is characteristic gray patch. We gave her the injection of antitoxine, used peroxide of hydrogen every hour locally.

May 11th.—Child decidedly improved; temperature lower, pulse less frequent; patches have the same general appearance.

13th.—I found the little child dressed, the throat about clean, able to take her food regularly.

These three patients all came down in the same house at the same time.

It may be noted that while in Case I the patient had nephritis, in Cases II and III that was not the case, though all three had the same dose of antitoxine.

Case IV.—Master B., aged seven or eight years, was just recovering from measles, and was attacked with membranous croup. I saw him with Dr. Ledlie late in the disease—the fourth or fifth day, I believe. We decided to use antitoxine, although we gave an unfavorable prognosis. The child was suffering from forced, labored breathing. He was given the injection about 4 P. M., and when Dr. Ledlie saw him at 9 P. M. the urgent symptoms had entirely subsided, and he thought the child in a fair way to recover. He was called up in the night, found him worse, and he died that morning.

Case V.—W. B., aged four years, American, previous condition good. The child came down with slight chill, high fever, sore throat, cough, and slight rash.

I saw him for Dr. Varney and was apprehensive that it was scarlet fever. Temperature, 103°; pulse, 120; respiration, 30. The next night, thirty-six hours later, I saw him with Dr. Varney. Temperature, 103.5°; pulse, 130; respiration, 30, difficult and labored; large gray patch on right tonsil; also membrane in the nares, with characteristic foul odor and acrid discharge. The diagnosis was definite, now as diphtheria, and we injected seven hundred and fifty units of the New York Board of Health antitoxine.

October 5th.—Child better both as to temperature, pulse, and respiration. The labored breathing was markedly gone.

16th.—The little fellow has made a continuous, steady improvement; has had two slight hæmorrhages from nose.

16th and 25th.—Urine carefully examined, and no indication of albumin or casts.

Case VI. *October 6th.*—N. B., sister to previous case, aged ten years, came down with sore throat, distinct patch, marked characteristic odor, face flushed, cervical glands swollen, high temperature and rapid pulse, and child seemed very ill. Deglutition painful. On account of her brother being ill with diphtheria we decided to use antitoxine at once, and did so; seven hundred and fifty units were injected; at that time temperature, 104°; pulse, 140; respiration, 26.

7th.—Child improved; profuse nasal discharge.

8th.—Child slept all night; decided improvement; slight nasal hæmorrhage.

16th and 25th.—Urine of this patient carefully examined and found to be free from albumin and symptoms of nephritis.

These children had tincture of iron in addition to the antitoxine internally and peroxide locally. Both were decidedly prostrated, and could scarcely stand alone, but later convalesced rapidly.

CASE VII.—Baby H., aged four years, came down with sore throat, high fever, temperature, 103.5°; pulse, 160; dry skin, with well-marked dark-gray characteristic patch on posterior wall of pharynx. I saw this case with Dr. Varney and suggested using antitoxine, which was done (seven hundred and fifty units) with tincture of iron internally and peroxide of hydrogen locally. The doctor tells me that she got on well, and at the end of the fourth day the throat was clean. This baby exhibited albumin in her urine previous to the use of antitoxine.

One other case I did not see except as health officer, in which antitoxine was used, which I know made a good recovery, and Dr. Hewett says he used Mulford's serum and was pleased with the result. In the eight cases, it will be noted that there was only one of nephritis, and that in the most virulent case, and it was probably due to the disease and not the serum.

CASE VIII.—An Italian child, aged seven years, in considerably better than the usual Italian quarters, came under my observation by being reported as diphtheria by the neighbors. On investigation, I found the child in the fourth or fifth day of the disease. They had had no physician, desiring to avoid quarantine. The child was extremely prostrated, and at that time the temperature was 104.5°, pulse 140, skin dry, and the membrane apparently disappearing from the entire tonsils, pharynx, and nares. I did not use antitoxine; would have done so but for the fact that it was late in the disease, and the membrane seemed to be disappearing.

The color of the patch, extensive prostration, the odor, the nosebleed, the swollen glands, convinced me that it was a genuine case of diphtheria. The child was put on the chlorine-and-iron mixture internally, with peroxide of hydrogen externally, whisky and milk as nourisher. The first application of the peroxide apparently removed the entire cast of the larynx. At the end of three days the child's throat was clean, the nares had cleared themselves, and the child seemed in every way better, but extremely prostrated. At this time I gave her iron, strychnine, whisky, animal broths, and milk, with the direction that they must be very careful not to allow her to run about.

On the eleventh or twelfth day, at 11 P. M., she was as well as she had been; the prostration was marked, from which she had not convalesced. She sat up at that time in bed, asked for a drink, took it, lay back, and was dead.

CASE IX.—Little M., aged two years and a half, was taken with what the doctor termed diphtheritic sore throat. The doctor did not use antitoxine, but gave the usual remedies, I presume. The child convalesced rapidly and easily, and, I understand, was not considered seriously ill. Was taken suddenly worse and died at once on about the tenth day of the disease. Cause of death, without doubt, paralysis of the heart.

CASE X.—J. C., aged twenty-two years, living in the immediate neighborhood of the previous case, was taken with diphtheria. Diagnosis from the clinical picture of membrane, temperature, pulse, rapid respiration. This case was complicated with the nephritis of some two years' standing. I saw the case as health officer, and was later in the day asked what I thought about antitoxine. I was not clear as to the action of the antitoxine with the chronic nephritis, but was willing to use it if the doctor and patient desired.

We were to decide the next morning, after the doctor had seen the patient. He found him comatose, and we did not use it. He died that night.

CASE XI.—Baby P., aged about two years, taken ill about six o'clock in the morning, was seen by its physician at ten o'clock, again at one, when it was apparent that the child was suffering from membranous croup. I saw the child at 3.30 with the physician, and it was suffering the most intense dyspnœa. It was apparent that what was done must be done quickly, so we intubated the child promptly; but the tube did not reach below the membrane, and in the course of ten or fifteen minutes it was apparent that tracheotomy would have to be done if the child was to be saved. We hurriedly prepared for tracheotomy, and in twenty minutes were back at the house ready to do the operation, but on our arrival we found the baby dead.

Since May, 1895, twelve cases of diphtheria have been reported to the board of health. In seven of these I have personally seen antitoxine used. In the other one I did not see the child, after it was used, until it was well. Of the eight patients on whom antitoxine was used, seven recovered. One case, the one following the measles, should not be classed against antitoxine, as the child was practically gone before it was used.

Of the four patients on whom antitoxine was not used, all died; one case (that of the baby) was so rapid that there was no opportunity for medicines after I saw it. In two of the four cases that proved fatal without antitoxine the cause of death was paralysis of the heart beyond question, and, as you have observed, it occurred after the clinical phenomena had quite cleared up; while in the fourth one the chronic nephritis was beyond doubt one of the fatal factors in the case.

In Case I there was a sharp nephritis with abundant albumin. In Case VII there was albumin in the urine before antitoxine was used. So, from my few cases, nephritis is not the bugbear some would teach.

Three of the cases treated with antitoxine were certainly of a malignant type, and the first one as much so as any case I ever saw, and I feel sure had not antitoxine been used the child would certainly have died.

The two others, while they were not so malignant a the first one, were equally characteristic, and I question what the result would have been had not antitoxine been used. Certainly the three cases mentioned were, from a clinical standpoint, decidedly more malignant than the cases that proved fatal without antitoxine.

It has been my misfortune to see several families practically swept away with diphtheria, and in none of the cases was the picture, in my judgment, any worse than in these three, and none of them so hopeless as the first case.

I believe that, in addition to the antitoxine, peroxide of hydrogen should be used as a spray hourly for the first twenty-four hours, of full strength, then reduced; that the patient should be nourished, and if not able to swallow, then by the rectum. Tincture of iron should be given internally, with strychnine and whisky as indicated.

I have purposely omitted the reliable and favorable statistics compiled by so many eminent men and authorities, and have carefully noted the adverse criticisms of those opposed to antitoxine. I am also aware of the many sudden deaths following the injection of antitoxine. I also know of two persons that died immediately after a drink of water. I am forced to express my confidence in antitoxine as a remedy for diphtheria, if used sufficiently early and in the proper doses, even if I had none but my first case to be influenced by, for such a case with the usual remedies would, I believe, have ended fatally.

In writing this paper it was not my object to elucidate the various theories of immunity, antitoxine, or the probable action of the toxalbumin, or to present statistics other than the cases I have personally observed. Neither will I refer to the results of the examination of the membranes, or the culture results I have observed. In some of the cases such examinations were not made because I did not have the facilities, while in others they were and demonstrated the Klebs-Loeffler bacilli, some of which I will show you; but I prefer to discuss the subject from the clinical picture we have so long known as diphtheria.

In conclusion, I will formulate my views.

1. Where there is the acute onset with or without chill, the high temperature, rapid pulse, sore throat, nosebleed, swollen glands, and the characteristic patch with its foul odor, I should pronounce it diphtheria.

2. If the picture was less marked, but the well-marked patch was apparent, I should assume it to be diphtheria.

3. In either of these cases I should try to obtain some membrane for microscopic examination, and determine the organism if present.

4. I should verify the result of the examination of the membrane by a culture.

5. I should not be governed in my treatment by the organisms being absent, and I should not wait to determine the result of the microscopic examination of the culture product.

6. If I found a throat in which there was a membrane and there were no systemic symptoms, I should make a culture, and be governed in prognosis, treatment, and quarantine by it.

7. I believe it proper to use antitoxine as a prophylactic in members of a family where there is an undoubted case of diphtheria.

8. I would use antitoxine in every case of diphtheria; in every case of angina with a membranous patch or with a marked suspicion of diphtheria.

9. I would use it in such a case at once; and in the class of cases where there was no systemic disturbance, but a patch, I would await the culture result. I would emphasize the necessity of immediate and prompt use of the antitoxine, because it is not expected that it would overcome the effects of the toxines upon the cells before its introduction.

10. The parts should be carefully cleaned, some place where the tissue is not tense being chosen. The syringe should be as aseptic as is possible, as the serum is an ideal culture medium for many germs; and, finally, the dose in children of one year and upward, without the laryngeal complications, one thousand units; for the same age, with laryngeal complications, fifteen hundred units. In all severe cases in children eight years or more old, fifteen hundred to two thousand units. Usually a second injection is not required, but if there is no change in the membrane, pulse, temperature, or dyspnœa in twenty-four hours, then a second injection is indicated.

The greater the number of antitoxine units in a given quantity of serum the more desirable that particular manufacture is.

A CHANCRE OF THE TONGUE.

By LUCIEN LOFTON, M. D.,
ASSISTANT TO THE CHAIR OF ANATOMY,
AND ASSISTANT DEMONSTRATOR OF ANATOMY, SOUTHERN MEDICAL COLLEGE,
ATLANTA, GA.

CHANCRE of the tongue in children is a rare lesion; consequently, I report a case that came under my care several weeks ago.

The patient, W. J., white, aged seven years, was a choreic. At the time I saw him he was being treated by Dr. S. G. Courtney Pinckney, of this city, under whose able management the boy's present condition is vastly improved. It was in the fourth week of his illness that I saw him with Dr. Pinckney. He was suffering considerably from headaches and general malaise, and had no appetite. He swallowed scarcely any solid food, while liquids were taken with indifference. The submaxillary glands were enlarged upon both sides, but upon the right they were more pronounced. The post-cervical region showed a true adenitis, while the epitrochlear glands were visibly affected. The parents of the child were quizzed thoroughly, but no specific history could be elicited. The boy was not allowed to leave the room for about a month, and had not come in contact with strangers. The family appeared free from syphilitic taint. Upon inspecting the buccal cavity, I asked the boy to place his tongue against the roof of the mouth, and when he did this I noticed an irregular sore upon the right side of the frenum, which proved a typical chancre. The family said the boy had bitten his tongue here, and appeared ignorant of the true character of the sore. The lesion was examined by Dr. Pinckney, Dr. Nicolson, and Dr. Wolff, of this city, who concurred in the diagnosis. The boy's choreic trouble is rapidly disappearing, under proper treatment, while his specific infection is fading under the administration of a sixth of a grain of protiodide of mercury after meals.

306–308 Equitable Building.

Therapeutical Notes.

Resorcin in the Treatment of Eczema.—Dr. Hartzelle (cited in the *Indépendance médicale*, January 6, 1897) recommends the following formula for erythematous eczema:

℞ Resorcin	7½ grains;
Glycerin	30 "
Limewater	450 "

M. S.: To be applied for a few minutes several times a day. This is said to allay the itching and check the secretion rapidly. After that, he employs the following:

℞ Vaseline	300 grains;
Powdered starch, Zinc oxide, each	75 "
Resorcin	15 "

M. Make an ointment, to be used two or three times a day.

A Remedy for Seasickness.—The *Progrès médical* takes this formula of Barber's from the *Semaine médicale:*

℞ Chloroform, Tincture of nux vomica, each	10 drops;
Compound tincture of lavender	1 fl. drachm;
Water	10 fl. drachms.

M. A teaspoonful to be taken every hour until the vomiting and nausea have subsided, care being taken to shake the bottle each time before pouring out the dose.

The Use of Manol in Whooping-cough.—Dr. Otto Ringk (*Allgemeine medicinische Central-Zeitung*, 1896, No. 57; *Centralblatt für die gesammte Therapie*, January, 1897) states that manol, or ozonized anise juice, should be diluted with from one to three and a half times its bulk of water, and from a teaspoonful to a tablespoonful of the dilution should be given every one, two, or three hours, according to the child's age. The urine must be closely watched throughout, lest carbolic-acid poisoning should occur. The drug is described as the expressed juice of the fruits of ordinary anise and star-anise and of althæa root, prepared with sugar and ozonized by Ringk's process. A little alcohol is added to preserve it. The ozonizing process is not described.

Lactophenine as an Analgetic.—Dr. Charles S. Potts, of Philadelphia (*Therapeutic Gazette*, January, 1897), states that his experience in the use of lactophenine as an analgetic has been very satisfactory. He reports fourteen cases. While this number is not large, he says, it is sufficient to show lactophenine is a valuable agent for the relief of pain.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 13, 1897.

MUNICIPAL SUPERVISION OF TUBERCULOUS DISEASE IN NEW YORK.

The action of the city board of health in requiring physicians to report cases of tuberculous disease, taken by itself, meets with the general approval of the physicians of the city, we think. But this approval has been secured by the present board's delicate and considerate action on such reports. The board co-operates with the physician in attendance; it does not manifest offensive officiousness. But what guarantee have we that the board as constituted at some future time will not act in a far different manner?

When the idea of a separate hospital for the tuberculous patients that are now treated in those of the general hospitals that are under municipal control was first talked about, it was generally understood that such a hospital, if it ever came into existence, would be managed by the commissioners of public charities, and the plan met with considerable favor with the profession. So far as we have been able to ascertain, the same can not be said of the new scheme of placing the hospital under the management of the board of health. There seems to be a general feeling that boards of health exist for the purpose of preventing disease, not for that of curing it. On the other hand, the New York board's excellent pioneer work in assisting the practising physician in diagnosis and prognosis by means of its bacteriological examinations of sputum, etc., is cordially appreciated; it is felt, however, that such a service on the board's part should not be made a pretext for its entering upon the field of therapeutics.

As yet, the idea of empowering the board of health, or suffering it to assume the power, to take possession of a tuberculous patient, whether he will or no, and force him away from his home, whether it is a tenement house or not, and into a hospital, has probably not been seriously considered by any great number of citizens. We hope it will not be acted upon hastily. The fact should not be lost sight of that, from the point of view of the public safety, there is a vast difference between a person affected with an acute infectious disease of a dangerous nature, such as small-pox, scarlet fever, and typhus, and the victim of a chronic malady such as tuberculous disease, infection from which can readily be guarded against in most instances. All these considerations ought to be thought about seriously and deliberately, we think, before the tuberculous patient's home is invaded.

ŒDEMA OF THE LOWER LIMBS AND DISEASE OF THE ASCENDING VENA CAVA.

Dr. H. Schlesinger (*Deutsche medicinische Wochenschrift,* 1896, No. 29; *Centralblatt für innere Medicin,* January 30, 1897) remarks that closure of the ascending vena cava, as is well known, is for the most part associated with œdema of both lower limbs and of the whole lower half of the body, as well as with cyanosis of the legs and the formation of a rather typical collateral circulation. But under certain circumstances the œdema may make its appearance on one side only and remain unilateral, as, for example, when ample collateral channels have previously been formed on one side, so that no considerable stagnation can occur on that side. This may take place under the following conditions: If previously, on account of closure of the iliac vein, the blood current has been forced into another channel; if a thrombus has been carried from the iliac vein into the vena cava and for some time does not close the latter completely, so that he blood from the other iliac vein can still flow partly nto the vena cava while the collateral circulation is gradually being established; if the collateral channels have already been well developed; or if the vena cava s double.

In these cases of unilateral œdema the diagnosis must be governed principally by the condition of the collateral irculation. If a decided collateral circulation has been stablished on each side, there is certainly obstruction of he vena cava, but if the œdema affects one side only, ne of the four possibilities mentioned must be the acual state of things. The diagnosis of closure of the ena cava is strengthened if the integument of the abomen is œdematous on one or both sides, or if albumin r blood appears in the urine, showing closure of a renal ein. The establishment of a collateral circulation on ne side only, without other symptoms, points primarily o the iliac vein as the seat of trouble. In those cases, owever, in which there is no superficial collateral circulation, but only one that is deep-seated, implication f the vena cava is rendered probable by unilateral or ilateral œdema of the skin of the abdomen, with peraps hæmorrhages from the kidneys, the stomach, or the ntestine; furthermore, a varicocele of gradual develpment, in the absence of local causes, is significant of an npediment to the flow of blood from the spermatic vein nto the vena cava.

MINOR PARAGRAPHS.

OTALGIA AS A MANIFESTATION OF INFLUENZA.

Dr. Daniel Kaufmann, of Vienna (*Wiener medizinische Blätter,* December 17, 1896), recently gave a clinical lecture on seven cases of otalgia due to influenza, six of which had been observed between the 1st and the 15th of November. All the patients had had moderate fever and complained of intense pain in one or both ears, which lasted for from three to nine days, but was not accompanied by any inflammatory phenomena. Dr. Kaufmann remarked that in the literature of ear diseases caused by influenza he had been able to find mention only of the intense painfulness of inflammatory affections of the ear occurring in the course of influenza. The cases on which he lectured he regards as examples of pure otalgia constituting an abortive form of epidemic influenza.

ITEMS.

"Refracting" Opticians.—The committee on legislation of the Medical Society of the County of New York asks us to publish the following:

A bill has been introduced into the Legislature, known as Assembly Bill No. 459, entitled "An Act to regulate the Practice of Optometry in the State of New York," which decrees that the regents shall appoint a board of examiners to examine any person who desires to treat any condition of the eyes requiring glasses, and grant a certificate of proficiency which must be hung in a conspicuous place in the office of the recipient. The opticians who call themselves refracting opticians are behind this measure, and contend that the refraction of the eye is no part of medicine, and that physicians have no right to take unto themselves the exclusive privilege of this department.

Every physician must be fully aware of the evil consequences that will of necessity follow the passage of a measure of this kind, as the examination requires simply a knowledge of optics, and is one that any person can prepare himself for in a very short time. The sponsors of the measure allege that they need protection; that they have been fitting glasses for a long time, and that they have a right to continue to do so. In answer we say that the time was, and not so long ago, when the pulling of teeth, bloodletting, and many of the present functions of the physician or those having a medical education were in the hands of the barbers; but increasing education has demonstrated that, in order to protect the public, medical privileges, of which the fitting of glasses is one, can be safely intrusted only to those who by careful medical training are capable of discriminating between health and disease.

The present standard of medical education in the State of New York is higher than anywhere else in the United States, and we urge the members of the profession to keep it so. If every physician who reads this statement will write to his or her representatives in the Senate and Assembly protesting against the passage of Assembly Bill No. 459 in any form which obviates a medical education as something which would be extremely dangerous to the public, the defeat of this measure is assured.

The committee on legislation will be happy to furnish names of representatives or any desired information.

D. B. St. John Roosa,
Egbert H. Grandin,
[Signed.] Charles E. Nammack,
William R. Pryor,
Frank Van Fleet, *Chairman.*

The St. Louis Medical Society.—At the last meeting, on Saturday, the 6th inst., the order for the evening included the following papers: General Considerations of the Diagnosis of Disease by Examination of the Blood, by Dr. Hugo Summa: Chlorosis, Leucocythæmia, Pseudo-leucæmia, and Allied Conditions, by Dr. H. N. Lyon; Diabetes, by Dr. L. T. Riesmeyer; Blood Infections, excluding Typhoid Fever and Tuberculosis, by Dr. Given Campbell; Typhoid Fever, by Dr. A. N. Ravold; Tuberculosis, by Dr. G. C. Crandall; and Malarial Diseases and Animal Parasitism of the Blood, by Dr. J. B. Ross.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 9, 1897:

DISEASES.	Week ending Feb. 2.		Week ending Feb. 9.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	4	0	12	4
Scarlet fever	138	7	160	8
Cerebro-spinal meningitis	1	1	1	1
Measles	165	2	164	3
Diphtheria	228	31	228	40
Croup	20	12	15	5
Tuberculosis	176	139	138	135

The Krauses of Carlsbad.—We are informed that some confusion has arisen at Carlsbad, Bohemia, because patients who are accredited merely to Dr. Kraus find, on arriving, three Drs. Kraus in active practice, viz.: Dr. J. Kraus, Senior, Dr. Frederick Kraus, and Dr. Oscar Kraus. Dr. J. Kraus, Sr., is, no doubt, the physician usually meant, he having been associated with Carlsbad so many years, but, whether he is or not, it is evident that confusion can only be avoided by correspondents' using the full name of the Dr. Kraus intended.

The Doctors' Club of the City of New York.—At the last regular meeting, on Wednesday evening, the 10th inst., the programme included a discussion on Pneumonia in Children, and its Treatment, which was to be opened by Dr. John F. Holmes; a paper entitled The Abuse of Medical Charity; the demonstration of specimens; the presentation of patients; and reports of cases

The Richmond Academy of Medicine and Surgery.—At the last regular meeting, on Tuesday evening, the 9th inst., a discussion on The Treatment of Acute Lobar Pneumonia was to be opened by Dr. R. D. Garcin.

The Fifth District Branch of the New York State Medical Association.—The thirteenth annual meeting will be held in Brooklyn on Tuesday, May 25th. All fellows who desire to read papers are asked to notify the secretary, Dr. E. H. Squibb, P. O. Box 760, Brooklyn.

The Society of Medical Jurisprudence.—At the one-hundred-and-twenty-fourth regular meeting, on Monday evening, the 8th inst., Dr. William Hirsch was to read a paper entitled Transitory Disturbances of Consciousness in their Medico-legal Aspects.

The Late Sir Spencer Wells.—It is announced that Sir Thomas Spencer Wells, the famous London ovariotomist, died recently in Cannes, France, at the age of seventy-eight years.

Change of Address.—Dr. Henry G. Piffard, to No. 256 West Fifty-seventh Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 1 to February 6, 1897:*

Moseley, Edward B., Major and Surgeon, is ordered, upon the expiration of his leave of absence, to Benicia Barracks, California, relieving Munn, Curtis E., Major and Surgeon. Major Munn, on being thus relieved, is ordered to Fort Logan, Colorado, for duty, relieving De Loffre, Augustus A., Major and Surgeon. Major De Loffre, on being thus relieved, is ordered to Fort Sam Houston, Texas, for duty.

O'Reilly, Robert M., Major and Surgeon, is granted leave of absence for two months, with permission to go beyond sea.

Shannon, William C., Major and Surgeon, will, upon the expiration of his sick leave, be relieved from duty at Fort Custer, Montana, and ordered to Jackson Barracks, Louisiana, relieving Woodson, Robert S., First Lieutenant and Assistant Surgeon. Lieutenant Woodson, on being thus relieved, is ordered to Fort McPherson, Georgia, for duty, relieving Wales, Philip G., Captain and Assistant Surgeon. Captain Wales, on being thus relieved, is ordered to Fort Niobrara, Nebraska, for duty.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending February 6, 1897:*

La Motte, H., Assistant Surgeon, is granted sick leave.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Period from January 16 to February 5, 1897:*

Bailhache, P. H., Surgeon. When relieved from duty at New York, N. Y., on or about March 1, 1897, to proceed to Washington, D. C., for duty. January 27, 1897.

Purviance, George, Surgeon. To be relieved from waiting orders, February 20, 1897; then to proceed to Baltimore, Md., and assume command of service. January 27, 1897.

Hutton, W. H. H., Surgeon. Granted leave of absence for five days from January 22, 1897. To proceed from Detroit, Mich., to San Francisco, Cal., in time to arrive there February 25, 1897, and assume command of service. February 5, 1897.

Stoner, G. W., Surgeon. When relieved from duty at Baltimore, Md., on or about February 25, 1897, to proceed to New York, N. Y., and assume command of service. January 27, 1897.

Godfrey, John, Surgeon. When relieved from duty at San Francisco, Cal., on or about February 25, 1897, to proceed to Detroit, Mich., and assume command of service. January 27, 1897.

Irwin, Fairfax, Surgeon. When relieved from duty at Washington, D. C., about March 5, 1897, to proceed to Philadelphia, Pa., and assume command of service. February 5, 1897.

Carter, H. R., Surgeon. Granted leave of absence for seven days. January 19, 1897.

Carmichael, D. A., Surgeon. When relieved from duty at Vineyard Haven, Mass., on or about March 1, 1897, to proceed to Cleveland, Ohio, and assume command of service. February 5, 1897.

Glennan, A. H., Passed Assistant Surgeon. To be relieved from duty at Reedy Island Quarantine Station, April 5, 1897; then to proceed to St. Louis, Mo., and assume command of service. January 27, 1897.

Woodward, R. M., Passed Assistant Surgeon. When relieved from duty at Cleveland, Ohio, on or about March 10, 1897, to proceed to Reedy Island Quarantine Station for duty and to assume command of that station, April 5, 1897. January 27, 1897.

Vaughan, G. T., Passed Assistant Surgeon. To proceed from Philadelphia, Pa., to Washington, D. C., for duty. February 5, 1897.

Brown, B. W., Passed Assistant Surgeon. To proceed from Washington, D. C., to Charleston, S. C., in time to arrive there January 28, 1897, for temporary duty. January 19, 1897.

Stewart, W. J. S., Passed Assistant Surgeon. To proceed from Washington, D. C., to Vineyard Haven, Mass., about March 1, 1897, and assume command of service. February 5, 1897.

Prochazka, Emil, Assistant Surgeon. Order of January 5, 1897, directing him to report for examination revoked. January 20, 1897.

Cumming, H. S., Assistant Surgeon. When relieved from temporary duty at Southport Quarantine, on or about January 30, 1897, to proceed to New York, N. Y., for duty. January 19, 1897.

Society Meetings for the Coming Week:

Monday, *February 15th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Connecticut Medical Society; Chicago Medical Society.

Tuesday, *February 16th:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); New York Odontological Society; Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Chemung (quarterly), Kings, Livingston (quarterly), and Westchester (White Plains), N. Y.; Baltimore Academy of Medicine.

Wednesday, *February 17th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

Thursday, *February 18th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Massachusetts, Society for Medical Improvement (private).

Friday, *February 19th:* New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Births, Marriages, and Deaths.

Married.

Brown—Cantrell.—In Spartanburg, South Carolina, on Wednesday, February 3d, Dr. J. R. Brown, of Clifton, South Carolina, and Miss Floride Cantrell.

Died.

Hammond.—In Worcester, Massachusetts, on Thursday, February 4th, Mrs. Lillis Peckham Hammond, wife of Dr. L. H. Hammond.

Hurd.—In Atlantic City, New Jersey, on Friday, February 5th, Dr. Samuel Hurd.

Letters to the Editor.

ANTIPYRINE AND CALOMEL ONCE MORE.

112 East 128th Street, New York, *January 25, 1897.*

To the Editor of the New York Medical Journal:

Sir: I thought we were to give our good old friends, antipyrine and calomel, a rest, allowing them to remain peacefully side by side, though not too close together. But Dr. Rosenau has thought fit to attempt a reply to my criticism of his article, and as in doing so he has again made several errors and misstatements, and as should like to settle the matter of the incompatibility of antipyrine and calomel once for all, if possible, I feel constrained to ask for some of your valuable space or a final statement. I am sorry Dr. Rosenau did not nform himself better on the subject before replying. He had time enough to do it, and if he had done it he would never have written his second article.

Dr. Rosenau is mistaken when he avers that his chief rroneous conclusion, to which I referred, was that either drug recognized the presence of the other in he economy. To the patient it makes mighty little ifference whether the bichloride is formed in the morar, in the spoon, or in his stomach. If the question ad only been as to when the bichloride was formed, efore or after ingestion, I should not have considered it worth my while to discuss the matter. The doctor's real error consisted in drawing the conclusion that because he had noticed no toxic effects from the simultaneous administration of from one twelfth to one fourth of a grain doses of calomel and antipyrine, therefore those drugs were not incompatible at all. The doctor says that in an account of the original experiments of Dr. Werner, furnished him by Messrs. Merck & Co., the statement is made that the change occurs in the stomach, this fact being arrived at by crude attempts to reproduce in the laboratory the conditions present in that organ in the febrile state; no statement whatsoever is made that the change takes place as a result merely of the mechanical contact of those chemically stable compounds. He therefore sees "an important discrepancy in the statements of those who are in position to know—viz., Dr. Robinson and Dr. Werner." Even if there were a discrepancy as to the time and place of the formation of the bichloride, it would not of course negative the fact of the incompatibility itself; but even this discrepancy is only an imaginary one, as I shall show presently. Dr. Werner's experiments (of which, by the way, I was totally unaware when writing my first article) were performed as follows: He triturated in a mortar equal parts of antipyrine and calomel (the same as the pharmacist does when called upon to dispense those drugs), transferred the powder to a test tube, added some water of about 100° F. temperature, and after a little while tested the clear filtered solution. Bichloride was invariably found. As is seen, no particular attempts, "crude" or refined, were made to imitate the condition of the stomach. The water was not even acidulated.

Now, if bichloride is formed under such conditions, does Dr. Rosenau know of any mysterious agency that will prevent that change when the drugs are taken into the stomach? As to the water, it may be given to the patient in the spoon or furnished by the stomach, the latter simply acting as a receptacle, neither producing nor retarding the reaction. The alleged discrepancy is thus seen to disappear and resolve itself into nothing. Should the doctor object to the absence of the acid in the tests and say that perhaps the hydrochloric acid of the gastric juice might prevent the change, then I will inform him that I have applied the test with water acidulated with 0.2 per cent. of hydrochloric acid and the reaction was only more rapid and complete.

As to the stability of those two chemicals, in which the doctor wants to make us believe, calomel is so stable that it is even affected by light, and the pharmacopœia therefore directs it to be kept in amber-colored bottles. Alkalies decompose it into mercurous oxide, and it is not advised to prescribe it in connection with another medicine containing hydrochloric acid, for fear of the formation of mercury bichloride; with potassium bromide it forms a highly poisonous compound, and is, in fact, incompatible with a number of substances too numerous to mention.

As to antipyrine, it is affected or decomposed by, and therefore incompatible with, the following drugs (not by any means all that I could enumerate): With sweet spirit of nitre a green color is produced; with hydrocyanic acid, a yellow color; with ferric chloride, a blood-red color; with ferrous sulphate, a yellow-brown color; with syrup of iodide of iron, a red-brown color; with alum, a dark-yellow; with chloral hydrate it makes an oily fluid; with sodium salicylate it forms (sometimes, not always) a mixture from which an oily fluid separates after a while; with infusion of uva ursi it forms a precipitate, as also with the tincture of cinchona and of rhubarb, with syrup of wild cherry and with all other preparations containing tannin (and in this last respect it behaves simply like all the other alkaloids—antipyrine being a synthetical alkaloid—which are precipitated by tannin).

But, to return to the main subject under discussion. Fortunately, in all questions of a chemical nature we need not take anybody's word; we can verify all statements in our laboratory. Now, if Dr. Rosenau is really anxious to settle in his mind the question of whether it is safe to administer antipyrine and calomel in combination or not, let him proceed as follows: Let him take some antipyrine and some calomel, say fifteen grains of each, triturate them in a mortar, as the pharmacist does, pour some warm water on the mixture, triturate a little longer, and then filter. The doctor certainly knows that calomel is absolutely insoluble in water; the clear filtered solution should therefore be free from any trace of a mercurial salt, provided no bichloride was formed in the mortar. Let us proceed to test the solution. 1. We pass a stream of sulphureted hydrogen (H_2S) and we get a black precipitate of mercuric sulphide (HgS). 2. We add a few drops of a silver-nitrate solution; we get a white precipitate of silver chloride ($AgCl$), showing the presence of a soluble chloride, in this case mercuric chloride, of course. 3. We take a bright piece of copper foil or wire (a bright penny, made so by a few drops of HCl or HNO_3 will do) and dip it into the solution (acidulated with some hydrochloric acid); the copper acquires a silvery white coating of metallic mercury. 4. We add a dilute solution of potassium iodide; we get a red precipitate (very slight) of mercuric iodide (HgI_2). 5. With limewater or solution of potassa we get a yellowish precipitate of mercuric oxide (HgO). Is the doctor now satisfied that mercuric chloride is formed by the combination of the two drugs in question? As to the *exact* chemical reaction which takes place, it is very complex and has not yet been established with absolute certainty. But the equation may be expressed as follows:

$$\underset{\text{Calomel.}}{3\,Hg_2Cl_2} + \underset{\text{Antipyrine.}}{2\,C_{11}H_{12}N_2O} + \underset{\text{Water.}}{H_2O} = \underset{\text{Mercurous oxide.}}{Hg_2O} + \underset{\text{Mercuric chloride.}}{2\,HgCl_2} + \underset{\text{Metallic mercury.}}{Hg_2} + \underset{\text{Antipyrine hydrochlorate.}}{2\,C_{11}H_{12}N_2O.HCl.}$$

I have established, I believe, beyond the possibility of cavil or successful contradiction, the main point of my previous communication—namely, that it is not safe to prescribe antipyrine and calomel together, *because they are incompatible.* As the affinity of the two drugs for each other is not very great, I was not dogmatic about the matter and said, as I say now: "An amount of bichloride *may* be generated which may produce toxic effects. It may not happen in every case, but, as it has happened in some cases—one within my personal knowledge—we do not want to forget that fact." And, apropos, as all theories and hypotheses must doff their hats and bow to a *fact*, a report of that case may help to shed some light on the subject.

The case happened nine years ago, when I was yet a follower of the mortar and pestle. Among other prescriptions, we got in one day the following:

"Antipyrini 0.5
"Hydrarg. submur.................. 0.8
"M. f. pulv. No. 1. D. tal. dos. iij.
"S.: Take one as directed. Dr. F."

We dispensed it as ordered. About twenty minutes after taking the powder, the man was taken with violent pains in the stomach and afterward with vomiting. In two hours the man took another powder, and in about half an hour was taken with severer pains and vomiting than the first time. The patient sent over word to the doctor, and the doctor, who lived across the street from the drug store, came in to inquire whether a mistake had not been made in the dispensing of the prescription. We assured him that everything was all right and prepared a powder in his presence. He personally gave it to the patient, with the same result as before, only the pains came on much sooner—in about ten minutes. He then gave the patient, who was very much constipated, a powder of ten grains of calomel, and it worked satisfactorily without any untoward effects. Here is undisputable clinical evidence.

Dr. Rosenau says that, even if given five minutes apart, the drugs could come in contact with each other. I did not question that, but I said distinctly that they would not be "intimate" enough to react upon each other, putting the word "intimate" into quotation marks, and Dr. Rosenau shows that the principles of practical chemistry are entirely foreign to him (which I do not mean at all to reproach him with, as physicians can not be expected to be familiar with practical chemistry, unless it was at one time their specialty), when he fails to discriminate between simple "contact" and "intimate." Two salts may lie in contact ever so long, but fail to react, but as soon as they are intimately triturated, reaction takes place. And I repeat it as my positive opinion that if the drugs are given separately—five minutes or one minute apart makes hardly any difference—no danger is to be apprehended. The dose that might be formed from occasional contact would be too infinitesimal to be worth considering. I said that it would not do to sneer at laboratory experiments. Dr. Rosenau answers with the question: "Why do such authorities as Wood, Bartholow, and Biddle fail to make reference to the incompatibility of the drugs in question?" Now, this is a very peculiar line of reasoning. If those authorities *denied* those facts, then it would be a question as to which authority was right. But are we to deny facts simply because certain authorities fail to mention them? There are many things in the field of therapeutics which those authorities do not mention, but which are nevertheless true. The point that Dr. Rosenau makes, that if I am right, he has noticed no toxic effects from a thirty-second of a grain of bichloride in children two years of age, while according to Biedert the maximum dose is a thirty-third of a grain, is simply a quibble. First, I gave the proportion of the bichloride formed only approximately; I said *about* one eighth; it may be only one tenth or one fifteenth; second, Dr. Rosenau knows that the *maximum* doses are not mathematically exact quantities; they are given differently, and within quite wide limits, by different authorities, and I never have the least hesitation in exceeding the maximum doses of the books when I think my case requires it; bichloride, for instance, I very frequently prescribe in doses of one twenty-fourth of a grain every hour or two to children two or three years of age, particularly in cases of diphtheria. As to a possible idiosyncrasy of a patient to the action of calomel, this is fully answered by the above-reported case of the man on whom calomel alone acted "splendidly," while the combination of calomel and antipyrine produced toxic effects.

William J. Robinson, Ph. G., M. D.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-first Annual Meeting, held in Albany on Tuesday, Wednesday, and Thursday, January 26, 27, and 28, 1897.

The President, Dr. JAMES D. SPENCER, of Watertown, in the Chair.

(*Continued from page 193.*)

A Contribution to the Study of Cough due to Irritation of the Upper Respiratory Tract.—Dr. CHARLES N. COX, of Brooklyn, read this paper. He said that the accumulation of tenacious mucus in the nasopharynx often gave rise to a morning cough. Cough was also very commonly excited by irritation from the nasal passages or from the dry mucous membrane in atrophic rhinitis and pharyngitis. A patient with cough was too often dismissed with a prescription for a sedative, without any careful search having been made for the source of the cough. The sedative would lull the cough, but, of course, not remove the cause. It should be remembered that these irritative coughs were more than simply annoying; a constant and useless cough was not entirely devoid of danger.

Dr. JOHN O. ROE, of Rochester, said that cough was always a reflex act, and when arising from an irritation below the larynx was invariably for the purpose of expelling mucus. Where there was no expectoration, one was justified in concluding that the cough was due to irritation in the upper respiratory tract. One of the most fruitful sources of cough above the arynx was to be found in glandular hypertrophy at the base of the tongue.

Practical Conclusions based on Five Hundred Cases f Cardiac Disease.—Dr. JAMES K. CROOK, of New York, read a paper on this subject. Regarding hæmic murmurs, he said they were almost invariably systolic, accompanied by a venous hum, and usually transmitted into the large vessels of the neck. Of the organic cases, mitral stenosis was the most frequent, nd aortic stenosis the next. He had observed the "water-hammer" pulse in every case of aortic regurgitation, and also in three other cases in which no murmur was present. He thought it was probably a more contant sign of aortic insufficiency than the murmur itelf. One important reason for discriminating between he different murmurs was the effect on the prognosis. or example, aortic regurgitation had the gravest progosis, because it was more quickly followed by dilataon and hypertrophy than any other lesion. While mitral regurgitation was the most frequent valvular esion encountered, it was also the most tractable condition, and hence it carried with it the best prognosis.

Dr. RICHARD VAN SANTVOORD, of New York, said hat, of course, the intensity of a murmur did not inicate its significance, and hence some other method ust be relied on for giving this information. In this nnection it was well to remember that the sphygograph would indicate the amount of regurgitation stenosis at the aortic orifice. In connection with the ognosis, it should not be forgotten that it was possible r a functional disorder of the heart to be associated ith a valvular lesion. In illustration of this, the eaker cited a case in which he had treated a lady for a long time, with but little success, for symptoms which he attributed to a valvular lesion of the heart. It had then occurred to him that these particular symptoms might be due rather to the disturbances associated with the menopause, and a change in the line of treatment in accordance with this thought brought about a very speedy restoration to health.

Dr. ELI H. LONG, of Buffalo, said that where the heart was weak and the murmur diffused, it was often difficult to distinguish between a diastolic and a systolic murmur. By making intermittent pressure on the radial artery with the finger, one could determine whether or not the murmur was synchronous with its pulsation, and hence whether or not it was systolic.

Some Disease of the Alimentary Canal in the Light of its Development and Ancestry.—Dr. WOODS HUTCHINSON, of Buffalo, presented a paper with this title. It was, he said, an effort to apply the comparative method of study to pathology.

Some Unusual Causes of Cough.—Dr. EMIL MAYER, of New York, read this paper. He said that, according to Thomson, there were fourteen varieties of useless cough. A persistent, dry, hollow cough, coming on without the usual antecedents of acute disease, not associated with the physical signs of pulmonary disorder, and obstinate to treatment, was undoubtedly of reflex origin. Five cases illustrative of different varieties of cough were reported, as follows: Cough due to the presence of adenoids and hypertrophied tonsils; cough due to follicular pharyngitis and decidedly relieved by the curette; cough due to adenoids and follicular pharyngitis; cough due to hypertrophy of the lingual tonsils, immediately relieved by cauterization; and cough due to the *Leptothrix pharyngealis*. Cough might be considered to be reflex when it was spasmodic, practically constant, and without expectoration or elevation of temperature; when there were no physical signs of pulmonary disease; when it was persistently resistant to all medication; and when the general health was hardly disturbed.

The United States Pharmacopœia.—Dr. ELI H. LONG, of Buffalo, read a paper in which he recalled the fact that in 1818 the Medical Society of the State of New York, at the suggestion of Dr. Lyman Spaulding, of New York, had issued a call to other State societies, looking toward the adoption of a national pharmacopœia. Although the pharmacopœia originated with the medical profession, to-day pharmacal institutions and societies predominated in the work of its revision. For instance, in the Pharmacopœial Convention of 1840 there were twenty physicians; in 1870 there were sixty delegates, representing eight colleges of pharmacy; in 1890 there were one hundred and ninety delegates, eighty-five of whom were medical and one hundred and five pharmacal. It would seem right and proper that the representation of the two professions should be equal. Recently the question had been raised as to the expediency of indicating doses in the pharmacopœia and of introducing pharmacal preparations of known value and purity, irrespective of any proprietary rights connected therewith. In the author's opinion it would be better to omit doses from the body of the work in any case. If their introduction was demanded, they should be placed in a list where they would not be recognized as setting a standard. Regarding the other question, it should be said that foreign pharmacopœias admitted proprietary remedies, and inadvertently salol had been allowed to creep into the present edition of our pharmacopœia. At the present time our knowledge of new drugs had to be obtained from the circulars of the manufacturing chemists and pharmacists. These preparations should, he thought, be treated of officially in the pharmacopœia, and in this respect our pharmacopœia did not keep pace with practical medicine. He suggested that a section should be devoted to furnishing reliable information regarding new drugs that had been tried. This could be supplemented by annually issuing an appendix. He suggested also the appointment of a committee on the pharmacopœia, so that these and other matters of moment might receive due consideration before the society was called upon to send delegates to the next pharmacopœial convention.

The Effect of Cigarette-Smoking on the Respiratory Mucous Membrane.—Dr. Clarence C. Rice, of New York, in this paper, stated that almost without exception cigarette-smokers indulged in the habit to excess. The constant contact of the smoke with the mucous membrane of the respiratory tract resulted in the development, in those predisposed to disease of this portion of the body, of inflammatory conditions much earlier in life than would otherwise be the case. Statistics showed that the manufacture of cigarettes was now carried on on such an enormous scale that there was an allowance of about fifty cigarettes for every person in this country. Dr. Mulhall, of St. Louis, himself an old cigarette-smoker, maintained that the ill effects were chiefly due to inhaling the smoke deep into the bronchial tubes. Dr. Rice said that, while most writers stated that it produced only a moderate degree of congestion of the mucous membrane, his own experience indicated that it caused advanced atrophic nasal catarrh, with dryness and congestion of the pharynx. He believed that every person who had long used cigarettes suffered from a chronic cough.

A Contribution to the Study of Amœbic Dysentery.—Dr. Charles E. Lockwood, of New York, reported a case of amœbic dysentery and, after referring to the literature of the subject, drew the following conclusions: It is important to subject the fæces to microscopical examination in all cases of obstinate diarrhœa marked by remissions and exacerbations and a notable tendency to chronicity and anæmia and accompanied by offensive, brownish-yellow, liquid stools and colicky pain; rectal douches of a solution of bisulphate of quinine, 1 to 5,000, gradually increased to 1 to 1,500, are exceedingly efficient; if the diagnosis is not made in these cases before the parasite penetrates the submucous tissues, abscess of the liver is very likely to result; the cases are very prone to relapse; and it is possible that the use of acid solutions may prove of benefit in this disease, as acids have been found to be inimical to the activity of the amœba.

Fancies and Facts in our Work.—Dr. Joseph Eastman, of Indianapolis, read a paper with this title, in which he made a sort of running commentary on a number of topics of general interest. For example, he stated that many a life had been sacrificed by the fancy of chemical sterilization of the hands, to the exclusion of the mechanical methods of cleansing and sterilizing hands and instruments. In cases of pelvic inflammation, where the abdominal route was equally safe and effective, he thought it was wrong to do vaginal hysterectomy, for it involved the destruction of the pelvic floor and the vaginal vault. The records of carcinoma of the uterus should teach us to make a searching examination in every case of irregular hæmorrhage occurring about the time of the menopause, unless this flow was absolutely unaccompanied by other symptoms. Again, cases of abdominal pain or suspected intestinal obstruction should not be treated in a routine way; they should be treated either medically or surgically, but not by a "fatal compromise" of the two. The use of purgatives in these cases should be especially avoided.

Dr. A. Palmer Dudley, of New York, believed the chief cause of mortality in cases of suppurative appendicular inflammation was the enthusiasm of the operator in endeavoring to remove the appendix, and the consequent rupture of the adhesions.

Dr. George B. Fowler, of Brooklyn, protested against invaginating the appendix during an abdominal operation done for other conditions. He had known gangrene and sepsis to result from this procedure, as in this way the blood supply of the appendix was cut off and at the same time the appendix was tucked away in a septic cavity.

Dr. Eastman replied that he had effected invagination many times without any mishap, but he would remember this warning.

The Correction of Depressed and Saddle-Back Deformities of the Nose by Operations performed subcutaneously, without the Aid of Metallic or Other Artificial Supports.—Dr. John O. Roe, of Rochester, in this paper, said that ten years before he had presented to the society an original operation for the relief of pug-nose, and a few years later a new operation for the relief of angular deformity of the nose. The present paper dealt with two classes of depressed noses, idiopathic and traumatic. The operation must be varied to suit the individual case, but it must be done invariably with the strictest attention to antisepsis and asepsis. And the after-treatment should not be passed over lightly.

Dr. Emil Mayer commended the paper, and deplored the usual carelessness displayed by the general practitioner regarding common injuries to the nose.

(To be continued.)

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of November 11, 1896.

The President, Dr. R. C. Newton, of Montclair, N. J., in the Chair.

Diseased Brain.—Dr. Adolph Rupp presented the brain of a man thirty-eight years old. On removing the scalp a dense vascular adhesion had been discovered about half an inch in front of and to the left side of the junction of the coronal and sagittal sutures, at a point corresponding almost to the superior frontal sutures. This vascular cicatricial adhesion had been reported to have been caused by a fall on the head when the subject had been seven years old. There had been no corresponding injury noticeable on the inner aspect of the calvarium. The bone (skullcap) had been removed with difficulty, the dura mater having been firmly adherent to it over the vault, the seat of a chronic pachymeningitis. The dura mater was thickened and opaque, and very much congested, particularly along the longitudinal sinus, over the region of the paracentral lobes. The sinuses were full of dark, thick blood. The bones of the skull were thick and hard, having scarcely any diploë. The brain as a whole was congested, and its pia dull, and especially so along the Sylvian fissure and the anterior (second and third) convolutions, and more so on the left than on the right side. The dura mater was firmly adherent to the brain over the posterior portions of the anterior convolutions and the paracentral regions, where there was a rather thick and dense deposit of fibrinous material, which extended down into the sulci of these regions, apparently involving the cortical gray matter of these regions. This was about the region designated by Horsley and Schäfer as having something to do with thigh and leg rotation and flexion, besides toe movements. The acute meningitis was general. The blood-vessels of the brain were so full that they were very well marked generally. There was some serous effusion, but very little in the ventricles. The brain weighed fifty-four ounces.

The man had been a carpenter and painter. His work had rendered necessary his going into cellars where there was much sewer-gas and bad air. Clinically his last illness might be divided into three stages. The first period had been marked by symptoms of intermittent fever—chills, fever, and sweating, recurring every other day, with weakness and anorexia, besides insomnia during the intermission. This stage had lasted from about September 1st to September 25th. During the second period of his illness (September 25th to October 7th) there had been symptoms of acute nephritis, albuminous urine (over one third albumin), backache, and a return of insomnia, anorexia, and, besides, occasional vomiting and dizziness. Intercurrently during this second period he had been attacked by a right-sided dry pleurisy over the lower lobe, and acute articular rheumatism. During this period the pleurisy had abated so as to be painless, and the dyspnœa had disappeared. Toward the end of this period the rheumatism had also disappeared to a great extent, and the albumin in the urine had diminished to little more than a trace. On October 25th, the beginning of the last stage, he had been taken with severe vomiting, after having taken a very hearty meal and a good bumper of wine and Seltzer, against orders. Vomiting had continued, the skin had become hot and dry, and a severe pruritus which had developed early in the second stage had lessened, and intense restlessness had given way to constant delirium, accompanied during the last four days of life by convulsions. The convulsions had lasted at first from five to fifteen minutes, and the last, which had ended his life on November 7, 1896, had lasted not quite two minutes. The highest temperature reached during the first stage had been 104° F.; during the second stage, 101.5°, and during the last stage, measured in the rectum, it had ranged between 99° and 100.5° F. A marked symptom during the last stage, when he was conscious, and in the semiconsciousness preceding a convulsion, even during the semicomatose and delirious condition of several days before death, had been heterophemia; instead of saying, as just before he had had the first and second convulsion, "The attack is coming," he would say "Taxes, taxes." After his fall on the head when seven years old he had been sick for about four weeks, according to the mother's statement, with fever and delirium. Up to his last illness he had since childhood suffered much from headache. But no matter how severe his headache had been, he had always eaten very heartily. At one time of his life he had drank to excess in order to quell his head pains. During the ten years that he had been known to the speaker he had been a temperate man, only twice in the week smoking to excess, as many as twelve cigars. He had been phlegmatic, at times cranky, but not given to outbursts of temper. He had been subject to attacks of *petit mal*, and frequently spasms of the larynx, pharynx, and tongue. His tongue, he had said, rattled against his teeth, and he would have a choking sensation, and get red or livid in the face. About two years before he had had what had appeared to be a rheumatic affection of the hamstring tendons and muscles. The salicylates had given no relief, but iodide of potassium had. Was this hamstring trouble due to chronic meningitis over the above-mentioned cortex areas of Horsley and Schäfer? We knew that iodide of potassium would relieve the symptoms generated by brain tumors, at times, even when syphilis was not present. This man had never had syphilis. There had been no evidence discoverable to that effect. During the last two or three years of his life this man had taken as much as a pound and a pound and a half of bromo-seltzer a day to relieve his headaches. At times he had taken as much as six ounces within a half hour. He had used on an average as much as three pounds a week. Withal he had been a steady worker. It was an old observation, probably first noticed by Frenchmen, that epileptics had large brains. This man had been an ingenious mechanic; otherwise his more than average large brain had signified nothing superior in personal character.

Dr. Delavan being present, the speaker referred to Delavan's paper on cortical motor centres for the larynx. Speech being a very complex mechanism, physiologically and psychologically, might explain why it had been so difficult to establish a cortical area for the laryngeal muscles. It had been thought that the greater acuity of the leptomeningitis in the neighborhood of the speech centres might have accounted for the heterophemia in this subject, and that the constant corticular irritation of the chronic pachymeningitis had had much to do with the spasmodic affection of the throat and tongue. Putting these facts together, it was thought that the morbid changes shown by this brain allowed one to apprehend that laryngeal cortical motor centres were present, although nothing was definite or marked in the present instance.

Dr. D. Bryson Delavan said that the symptom of aphasia was well understood as being caused by a lesion or injury to a certain well-recognized locality of the brain; when it came to the cortical motor centres for the movement of the larynx, however, that was quite another matter. Some years ago. Professor Hermann Krause, of Berlin, and Dr. Ferrier, of London, had successfully located this centre in the dog and in the monkey, and the accuracy of their experiments had been proved by a number of later investigations. On the other hand, attempts to find the cortical motor centre of the human larynx had thus far failed. He spoke of a case in which a paralysis of the larynx had seemed to be due to a cortical lesion, but at the autopsy the cause of the trouble had been found to be in the medulla. There was not a case on record, so far as he was aware, in which cortical motor centres for the larynx had been located. He did not see how the case presented proved anything with regard to this centre; indeed, the nervous energy controlling the movements of the larynx was so abundant that, unless both sides of the brain were affected, there would be no paralysis.

The President said that in the brain presented the convolutions were very small and the brain was very flat.

(To be concluded.)

Book Notices.

Illustrated Skin Diseases. An Atlas and Text-book, with Special Reference to Modern Diagnosis and the most Approved Methods of Treatment. By WILLIAM S. GOTTHEIL, M. D., Professor of Skin and Venereal Diseases at the New York School of Clinical Medicine, etc. New York: E. B. Treat, 1896. Pp. 13 to 84. [In three portfolios; price, each, $1.]

IN the announcement of this combined atlas and text-book of skin diseases it is stated that the work will be issued in quarto portfolios, each comprising twenty-four pages of text, with numerous formulæ and four plates of cases taken from life and reproduced in colors with lifelike effect by a new photographic process, the text to be profusely illustrated with numerous black-and-white illustrations from photographs taken from life and selected from the author's extensive collection obtained in hospital, dispensary, and private practice. The author hopes to complete the work in twelve portfolios.

The parts now ready are portfolios I, II, and III, which we have received.

No. I deals with the anatomy and physiology of the skin. The first subject is, as promised, "profusely" illustrated with photo-micrographs in black and white, their virtue lying, the author says, in their not being mere diagrams, or yet just drawings in which the artist can introduce or group structures as he pleases, but the actual representation of "conditions as they exist." One diagram of a section of the skin, however, is resorted to and compares favorably, we think, with the other portrayals of "conditions as they exist." Speaking of the secretion of the sweat-glands, on page 22, the writer says that it is alkaline; but then on page 30 we are told (though not why) that it is "usually acid in reaction but it becomes neutral or even alkaline when produced in large quantities or for long periods of time." A little more care in revision would perhaps have given more clearness to these statements. Further along, in speaking of the conditions influencing the amount of sweat secreted, it is stated that a decrease in the amount of the watery vapor of the atmosphere causes an increased production of sweat, and that it is lessened by increases of watery vapor in the air, *hindering transudation.* These are interesting observations and recent, for in neither the work of Foster nor that of Landois and Stirling, nor in other works consulted, can this statement be found. Transudation plays such a very small part in the process of sweating that this need hardly be taken into account in calculating the daily amount of sweat, for that is a true secretion of the body.

Part II treats of therapeutics. Contrary to the author's views, lanolin is not thought to make so useful a base for ointments as the petroleums. Lanolin does not dissolve chrysarobin, and it does not subdivide mercury finely enough to be valuable for employment with this drug.

According to Luff's experiments on the absorption of medicaments from ointments (*Monatshefte für praktische Dermatologie,* xi, 2), the petroleum ointments permit of the most rapid absorption, and lanolin is the slowest in action.

The clinical classification used is Jessner's, slightly modified by the author, who thinks it is perhaps the most useful at present. In it urticaria and prurigo are classed as œdemas, under circulatory disorders. Favus, trichophytosis, chromophytosis, scabies, and phtheiriasis are grouped with scarlatina, measles, and small-pox; eczema, psoriasis, etc., are classed under inflammations. Alopecia areata comes under atrophics. This is trifle confusing from a pathological standpoint.

The remainder of Part II and all of Part III are given up to the consideration of the various diseases as they come in succession under the different heads of this classification, completing the first two classes—*i. e.,* functional disorders and circulatory disorders.

Accompanying these three numbers are eleven colored plates prepared by the new photographic process spoken of above. Of their kind, they are not bad, but color-photographic processes are yet far from perfection. No textual reference is made to them, as they all illustrate disease presumably to be considered later on. We wish all possible success to Dr. Gottheil.

Transactions of the American Otological Society. Twenty-ninth Annual Meeting, New London, Conn., July 14, 1896. Vol. VI. Part III. Published by the Society. New Bedford, Mass., 1896.

SPECIAL interest attaches to this latest number of these *Transactions* on account of the numerous papers relating to operations on the cranium for thrombosis of the lateral sinus, meningitis, cerebral abscess, etc., following suppurative disease of the middle ear. The trend of modern otology is decidedly in the direction of brain surgery, and the brilliant results obtained by these procedures must certainly stimulate otologists to even greater exertion. For this reason alone, if for no other, this number of the *Transactions* will receive a warm reception.

BOOKS, ETC., RECEIVED.

A Guide to the Clinical Examination of the Blood. For Diagnostic Purposes. By Richard C. Cabot, M. D. With Colored Plates and Engravings. New York: William Wood and Company, 1897. Pp. xix–3 to 405.

Physiology for Beginners. By M. Foster, M. A., M. D., F. R. S., Professor of Physiology in the University of Cambridge, and Lewis E. Shore, M. A., M. D., Fellow of St. John's College, Cambridge, etc. New Edition with Additions. New York and London: Macmillan & Co., Ltd., 1897. Pp. ix–247. [Price, 75 cents.]

Modern Surgical Dressings. By F. B. Kilmer. [Reprinted from the *American Journal of Pharmacy.*]

Diastase in Therapeutics. By C. C. Fite, M. D. Read before the New York Medical-surgical Society, January 4, 1897.

Stomach Digestion. By Frank H. Murdoch, M. D., Pittsburgh. [Reprinted from the *Pittsburgh Medical Review.*]

Mycosis Fungoides, more especially the Pre-fungoidal Stage. Clinical History of Two Cases. By Prince A. Morrow, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

A Case of Symmetrical Morphœa attended with the Formation of Bullæ and Extensive Ulceration. By Prince A. Morrow, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

The Use of Antitoxic Serum in the Treatment of Diphtheria under the Supervision of the New York City Health Department, with a *Résumé* of the Published Reports on the Subject. By Hermann M. Biggs, M. D., and Arthur R. Guerard, M. D. [Reprinted from the *Medical News.*]

Cerebral Syphilis. Some Observations on its Diagnosis and Treatment. By Daniel R. Brower, M. D., Chicago. [Reprinted from the *Peoria Medical Journal.*]

Stricture of the Urethra. A Report of One Hundred Cases Treated by Internal Urethrotomy. By William H. Dukeman, M. D., Los Angeles, Cal. [Reprinted from the *Pacific Medical Journal.*]

From Demoniacal Possession to Insanity. A Review and Abstract of a Chapter from Andrew D. White's Warfare of Science with Theology. By Warren L. Babcock, M. D.

Can Physicians Honorably Accept Commissions from Orthopædic Instrument Makers? By H. Augustus Wilson, M. D. [Reprinted from the *Philadelphia Polyclinic.*]

A Case of Circumscribed Œdema of Gouty Origin. By Bernard Wolff, M. D., Atlanta, Ga. [Reprinted from the *Journal of the American Medical Association.*]

The Proper Indications for Repair of Pathological Lacerations of the Cervix Uteri, and the Proper Operations to Meet them. By Albert Goldspohn, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

The Treatment of Extra-uterine Pregnancy, Ruptured in the Early Months, by Vaginal Puncture and Drainage. By Howard Kelly, M. D., Baltimore. [Reprinted from the *American Gynæcological and Obstetrical Journal.*]

Colono-enteric Irrigation in the Treatment of Intestinal Obstruction. By Edwin Pynchon, M. D., Chicago. [Reprinted from the *Chicago Medical Recorder.*]

Remarks on the Management of Glaucoma. By Leartus Connor, M. D., Detroit. [Reprinted from the *Journal of the American Medical Association.*]

New Inventions, etc.

A PORTABLE OPERATING TABLE.

By H. Beeckman Delatour, M. D.,

SURGEON TO THE NORWEGIAN, LONG ISLAND COLLEGE, AND ST. JOHN'S HOSPITALS, BROOKLYN, N. Y.

In an operating table simplicity, strength, and durability are the essential features. In addition, it is often lesirable to be able to move the table rom place to place, and yet, when laced in position for operation, it nust be perfectly rigid and capable of olding patients above the average eight. In the table presented, as nanufactured for me by Tiemann & o., I believe we have all the essential eatures of a permanent table comined with portability.

The table consists of two essential arts and two accessory parts. The top, hen opened to full length, measures x feet by twenty inches, and when lded measures three feet, the two ds folding in over the centre (as in ig. 1, B). Fastened to either side of is centre portion is a semicircle of eel serrated on the concavity. These are fastened by hinge joint and fold down over the ends.

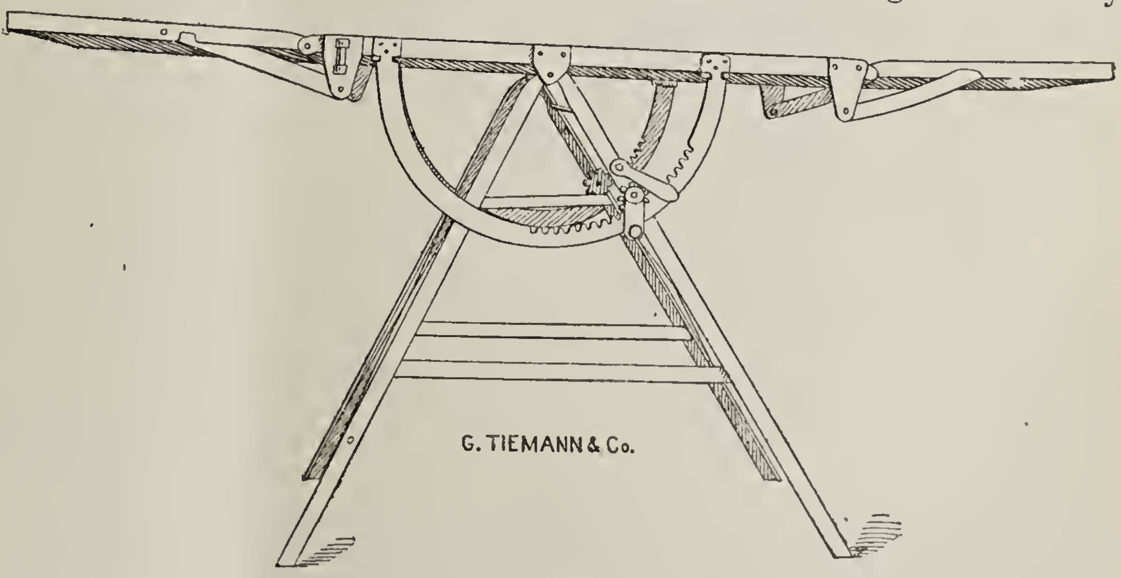


Fig. 2.

The top of the table is *convex*, with deep grooves on either side which serve to drain toward the upper end of the table. In making *the top convex*, I realize that a radical departure from customary lines has been made. The advantage in this is the complete drainage away from the body of all solutions or discharges. In this way the clothing and back of the patient are kept dry. Further, the pressure is distributed better over the entire back, and there is less lameness than where the patient is placed on a concave top.

The standard consists of four legs meeting a cross rod at the top. These legs are braced by several cross rods and bands (Fig. 1, A).

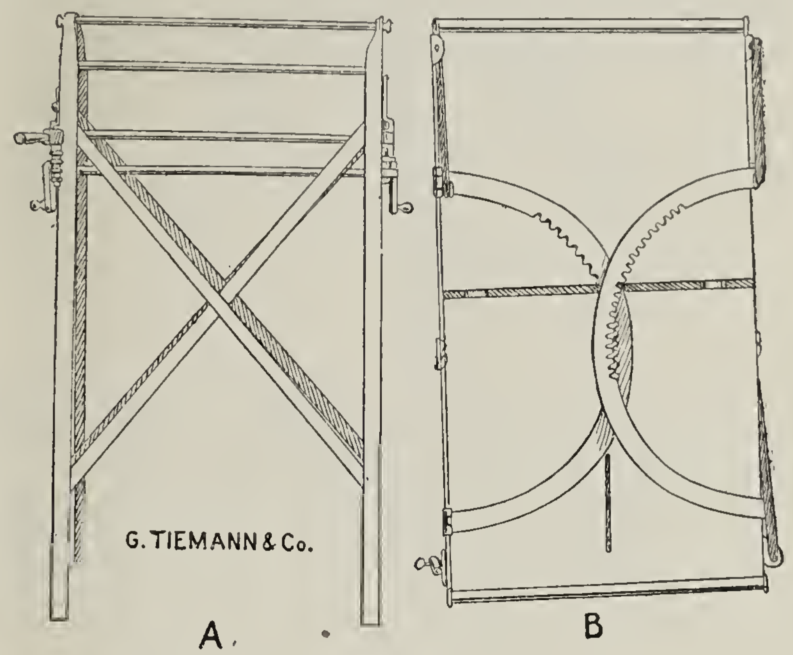


Fig. 1.

The table when put together can be placed in any desired position, making first (Fig. 2) a table six feet long; second, it can easily be placed in the Trendelenburg position (Fig. 3); third, by simply adding the necessary upright, a perfect lithotomy table is obtained (Fig. 4). While in this position the table can be easily tilted so as to combine the Trendelenburg posture with the lithotomy, as for cases of vaginal oöphorectomy, etc.

For the Trendelenburg position it is the common practice to tie the legs down over the lower end of the table. Cases of more or less serious nerve disturbances have followed this as a result of the stretching and pressure on the popliteal nerves. To avoid this I have added to this table a *yoke*, which is placed so as to fit accurately against the shoulders and support the weight of the body when it is inclined. A support of this kind was used originally by Trendelenburg, but in the tables of recent manufacture it has been omitted. It is certainly a very important adjunct (Fig. 3).

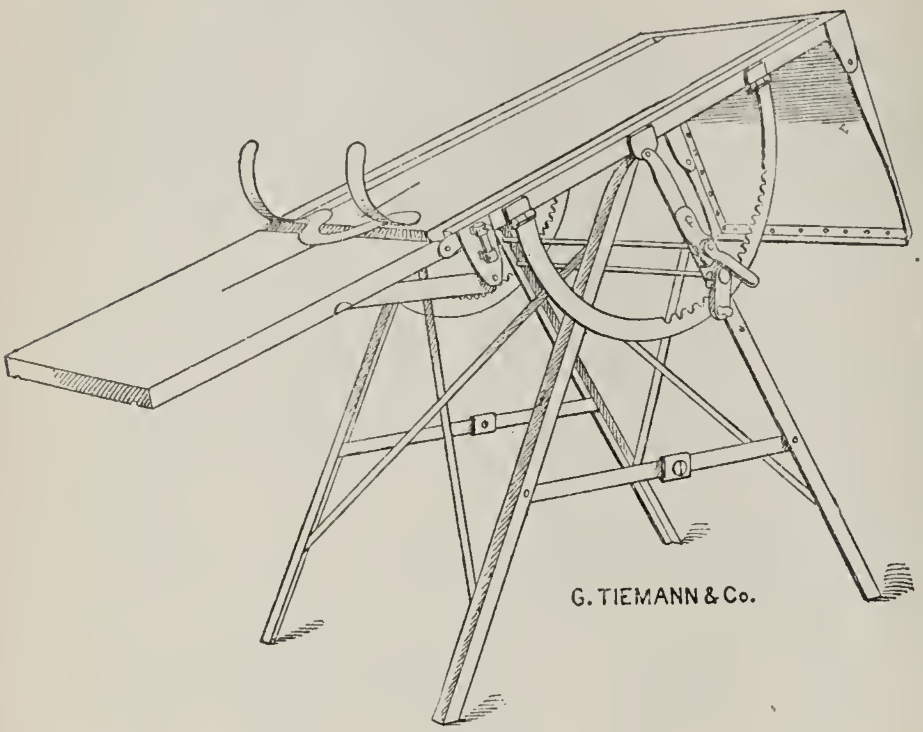


Fig. 3.

The table can be folded into a package 21 × 36 × 4½ inches and put into a canvas carrying case. Fig. 5 shows the table ready for transportation.

The mechanism for retaining the table in the various positions desired is very simple, and consists of a pair of cogwheels placed on either side of the standard and connected together by a rod. The cogs fit accurately into the serrations on the concave side of the semicircles fastened to the top. A peg fastened above one of these cogs by a simple movement securely locks them.

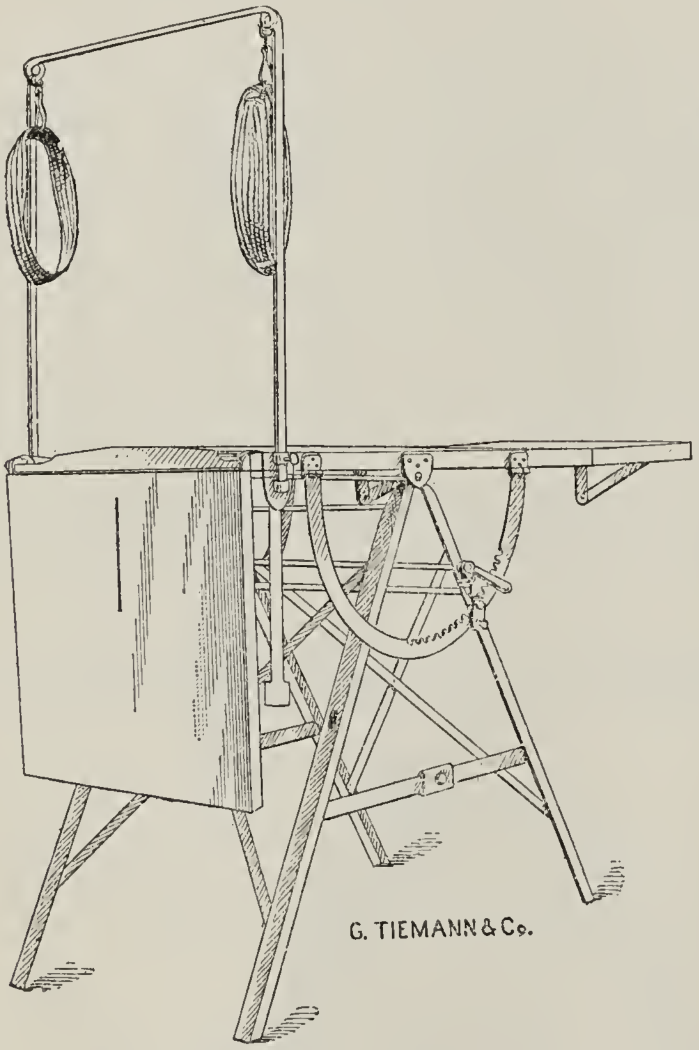


Fig. 4.

The advantages of this table are:

1. Portability.
2. Simplicity and stability.
3. Ease of adjustment by which the various desired positions can be obtained.
4. The use of the yoke to relieve the strain on the popliteal nerves when the body is inverted.

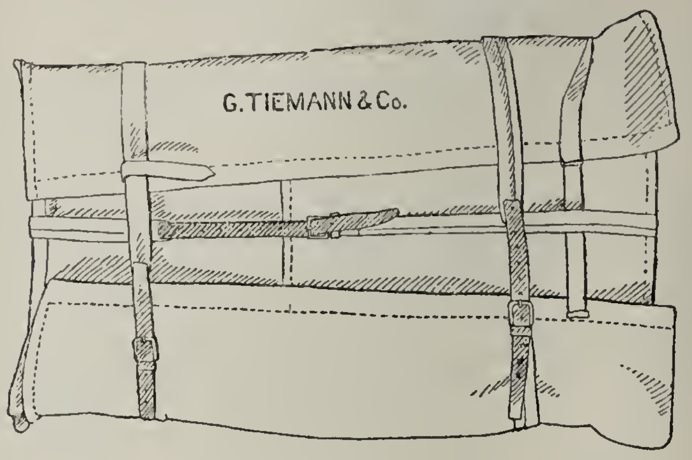


Fig. 5.

5. The *convex* top with lateral gutters for drainage, thus directing the solutions away from the body of the patient.

The table can easily be taken down or put up by one person within ten minutes, and can be readily transported in an ordinary physician's buggy.

It can be taken into a patient's house without attracting undue neighborly curiosity.

53 Eighth Avenue.

Miscellany.

Psittacosis.—The *Presse médicale* for January 16th contains an article on this subject by M. Gilbert and M. Fournier, of which the following is the substance: According to these authors, psittacosis is an infectious disease of a peculiar type, which is transmitted to man by parrots. They refer to an epidemic in 1892 in which nearly fifty persons were stricken. Since then other epidemics have occurred in which the consequences were not so important, although their origin was equally distinct. They think it is quite probable that the disease is not so uncommon as has been thought up to the present time, and that the number of cases reported will become more frequent in proportion to a better knowledge of the disease. Perhaps a certain number of the small epidemics of pneumonia which occur in families should be connected with this disease. It has evidently been confounded, they think, with a number of infectious diseases, and it was known under the name of infectious pneumonia during the epidemic of 1892. Shortly after this period, however, clinical investigations demonstrated that it was an infectious disease o a peculiar type, and that the pulmonary symptoms which were so frequent and intense as to attract th almost exclusive attention of physicians, should be simply considered as complications.

The authors give an account of five cases occurrin in one family, in two of which the patients died withi nine days; the three others had the disease in a milde form and recovered after a long convalescence. Th two who died had taken almost entire care of thre sick parrots; they had fed the parrots from their ow mouths, had given them injections to combat the diar rhœa, and had warmed them by holding them against their own bodies. It is not astonishing, then, that these persons were attacked first and so seriously. The feathers of diseased birds are soiled with dejecta which contain the pathogenic microbe in abundance; hence the transmission of this disease to man is clearly explained. A serious factor in this disease is age; in several epidemics it has been noticed that the affection was benign in children and young persons, and always or nearly always serious in middle life or old age.

Several authors have undertaken bacteriological researches for the purpose of isolating the pathogenic agent of psittacosis, but M. Nocard alone has succeeded in obtaining a result. He found, in 1892, in the bone marrow of the wings of parrots which had died from this disease a bacillus a description of which he gave the following year to the board of health.

The authors state that they have made a bacteriological examination of the blood and of the sputum of the patients who died, and Nocard's microbe was not found; numerous micro-organisms were found in the sputum, and the cultures enabled them to isolate virulent pneumococci and streptococci; the inoculations practised with the colonies, other than those of the pneumococci and streptococci, did not cause death; the cultures from the blood remained sterile.

The authors obtained the body of a parrot from the dealer who had sold the three parrots referred to, and ascertained, furthermore, that several other birds had died from the same disease, which, no doubt, had been transmitted to them by the dealer himself, who, while cleaning their cages, had evidently taken no precaution. The autopsy revealed an extremely intense congestion of all the abdominal organs; small ecchymotic spots were also noticed under the peritonæum; the spleen was enlarged; the intestine presented a very intense congestion of the mucous membrane, and here and there small ulcerations. The blood of the heart and the substance of the spleen contained, in a pure condition, a bacillus which corresponded perfectly with M. Nocard's description; this bacillus was also found in a pure condition in the marrow of the humerus and of the femur, and it existed in abundance in the intestine. Cultures were made on different media and, in all, abundant colonies of Nocard's bacillus were developed.

The authors refer to a case of psittacosis in M. Mathieu's service at the Hôpital Andral, in which the patient died, and state that at the autopsy an examination of the blood from the heart was made, with the result that they succeeded in isolating a bacillus which presented morphologically all the characteristics of that which had before been found in parrots, and absolutely resembling that described by M. Nocard. This microbe is, according to his description, a short, thick bacillus with rounded extremities, both aerobic and anaerobic and extremely mobile. It does not take the Gram stain, is rapidly developed on all media, does not iquefy gelatin, and, finally, does not ferment lactose or coagulate milk. All these characteristics the auhors were able to verify in the bacillus found in the parrot as well as in that which was isolated in the blood f the patient referred to.

The morphology and the biological properties of Nocard's bacillus, continue the authors, may give rise o the idea that this micro-organism is only a *Bacillus oli* which inhabits normally the intestine of parrots, nd acquires, under unknown influences, the pathogenic properties which they have dwelt upon. In fact, it is known that the normal *Bacillus coli* in man may acquire also pathogenic properties and give rise to many infections.

For the purpose of a clearer knowledge in this respect, the authors examined the intestinal contents of several normal parrots, and they found several varieties which corresponded exactly with some of the varieties of bacilli which were described and classified by M. Gilbert in an article which was published in the *Bulletin de la Société de biologie* for March 18, 1893; such were the immobile varieties which caused or did not cause fermentation of lactose, and especially a mobile "para-coli" bacillus which did not cause fermentation of lactose or produce indol. The latter resembled, in these characteristics, Nocard's bacillus.

This knowledge, continue the authors, seems to authorize at the present time the following hypotheses in regard to the origin and nature of psittacosis: We may think, on the one hand, notwithstanding their resemblance, that the bacillus of psittacosis and the normal intestinal bacillus of the parrot tribe have nothing in common originally; on the other hand, we may admit that these two germs are derived from a common source, and that even the usually inoffensive bacillus of the intestine is capable, under certain influences, of increasing its virulence, becoming infectious, and being transmitted from parrot to parrot and from them to man.

A Plea for a Less Restricted Diet in Typhoid Fever.—In an article on this subject in the *British Medical Journal* for January 16th Dr. A. G. Barrs states that no one who has had much to do with patients suffering from typhoid fever can fail to be impressed by the extreme degree of emaciation, feebleness, and prolonged disability which that disorder not infrequently entails upon its victims. It was with the idea, he says, that something might be done to mitigate its evils in this respect that he ventured three years ago to adopt a new method of treatment. He cites two cases as being good examples of the beneficial effects of solid food upon the prolonged but small disturbances of temperature seen in cases of typhoid fever long after the specific process has run its course. In the second case, at what appeared to be the stage of defervescence, the temperature suddenly rose to 104° F. in the evening, to fall to subnormal in the morning, and continued to do so for some days without any obvious cause. In this case the persistent administration of solid food soon restored the patient to a normal temperature curve and good health. The author relates these two cases to illustrate the manner in which he has ventured, and urges others to venture, to depart from the orthodox and customary dietary of typhoid fever and its convalescence.

The number of cases, he says, which have come under his own personal care during the last three years is not large enough to warrant any positive conclusions upon all aspects of the question, but he believes the results are sufficient to justify him in urging others to make a trial of this simple modification of the usual method of feeding typhoid-fever patients. He states that out of thirty-one cases of typhoid fever only three patients died, and in these three cases no solid food could be given. No patients were lost in those cases in which early feeding was adopted, and the mortality was not so great as the average mortality of the hospital. True relapse occurred in two of the cases.

With regard to solid food during the convalescent stage, Dr. Barrs believes there is already a somewhat general tendency to relax the strict rules at one time followed, although in 1894 Dr. Curnow laid down, in most emphatic terms, he says, the law that no solid food should be given until the temperature had been normal for at least ten days. The reason alleged for this practice is the belief that the earlier administration of solid food will cause relapse or even perforation.

In regard to relapse being caused by solid food, Dr. Barrs states his own utter disbelief in the notion. If, he says, we accept the specific nature of the infection, how can we at the same time admit that a little bread and butter or a little meat can set up an attack of the disease —for that is what we mean by "relapse"—unless, of course, it contains a dose of the typhoid bacillus, which milk or any other fluid may much more easily contain? Perforation does now and again occur in the period of convalescence, or, to speak more correctly, after the temperature curve has fallen to normal and remained there for some days, for no patient can be said to be convalescent whose intestine still presents unhealed typhoid lesions. He finds it difficult, he says, to conceive of any method of treatment more calculated to delay healing and so favor perforation than the prolonged period of starvation which the plan of fluid feeding, still advocated as essential for ten or fourteen days after the febrile state has come to an end, adds to the devastating effect of pyrexia and limited feeding of the disease itself. The conditions favorable to healing are the same for the small intestine as for any of the external parts of the body, and no surgeon would expect to see wounds undergoing repair in the shortest possible time in a patient living on fluid food alone. The question of physiological rest to the parts involved—that is, the reduction of intestinal movements—is, he thinks, no difficulty in this respect. Peristalsis is always going on more or less, and there is no reason to believe that solid food which has undergone efficient digestion in the stomach causes more vigorous movement than milk or any other fluid nutrient. The author expresses his firm belief that there is no sufficient reason for withholding solid food in the stage of convalescence; on the contrary, he holds strongly that the sooner the patient returns to the natural diet of health—that is, solid mixed food—the sooner will he be restored to a condition in which he is best able to withstand any further invasion of the typhoid organism, and the sooner will his nutrition be such as to place his intestine under the best possible condition for healing.

Concerning the more important question of the dietetic management of the acute stage of the disease, he remarks that perhaps no one will disagree with the general statement that, as there are a normal temperature, a normal pulse-rate, a normal body weight, a normal frequency of defecation, and so on, which we regard as characteristic of good or normal bodily health, so there is belonging to that same state a normal appetite, a normal capacity to take natural food. The normal food for us is just as much a fixed quantity as our normal temperature, and there is no need to state what it is. The business of the physician in typhoid fever is to see that the patient departs no further from the line of health in food as well as in temperance, frequency of defecation, and so on, than the nature of his disease requires. His condition at the moment should be the guide, and not our preconceived notions as to the requirements of his disease. He should, as Sir William Roberts has so well said for some other ailments, "Eat what he likes and what agrees with him." Whether a patient likes a thing or not, continues Dr. Barrs, depends upon his appetite for that particular thing, and as a rule an appetite for any particular thing is a pretty sure indication that it will agree; that is, it will be digested, absorbed, and assimilated in due and normal course, and will tend to the well-being and not to the undoing of the patient; and he states that his rule, then, in typhoid fever is to give the patient such wholesome food, solid or fluid, as he can take, using the word take to mean that he likes it, and wishes for it, and enjoys it.

To give a patient with a dry and shrivelled tongue, teeth covered with sordes, semicomatose from pyrexia, and utterly indifferent to all around him, and especially to food, meat or any other solid would be, he thinks, as silly and as cruel as to withhold it from a patient who expressed himself as genuinely hungry, and looked so, because his temperature curve was not normal, or because his bowels were acting a little too frequently. If he is convinced that a patient is genuinely hungry—and many patients are so in all stages of typhoid fever—he never refuses him reasonable solid or any other food, whatever his condition in other respects may be. Whenever a typhoid-fever patient can eat meat and enjoy it, he has never much doubt as to his recovery. It is usually minced meat to begin with, because it is more easily given in the recumbent posture, for Dr. Barrs states that he is very tardy in allowing the patient to leave even the recumbent posture until he shows that he has largely regained his normal strength.

The administration of solid food during the course of the fever is generally said to be undesirable, if not absolutely dangerous, from its proneness to produce increased diarrhœa and perforation. The author does not mention hæmorrhage, though, he thinks, perhaps that may have been alleged as a reason for a strictly fluid diet. His cases show, he says, that reasonable diet of any kind has no effect one way or the other in the matter of diarrhœa. Diarrhœa is a very varying thing in typhoid fever, even with the strictest dieting, and he thinks such variations in it as are usually attributed to food may very readily and reasonably be attributed to the specific lesion of the disorder.

Perforation is, he thinks, by far the most important point, and he is willing to concede that if solid food could with reasonable certainty be blamed for a single case of perforation, it would be quite unjustifiable to give it.

The author is of the opinion that the majority of cases are due to the direct effects of the typhoid process, and are not accidental in the strict sense of the term, and are unavoidable by any form of dieting unless it is by liberal feeding in order to maintain the resisting powers of the individual at the highest level possible under the circumstances. He thinks too much has been made of ulceration in typhoid fever. In his opinion, of ulceration—in the sense of a spreading molecular destruction of parts—there is very little, save that which is necessary for the detachment of the slough, and when the sloughing process has reached the peritoneal coat the simple and natural process of separation will cause perforation. Tympanites and violent peristalsis are not more likely to occur, he says, under the method of feeding which he advocates than under strictly fluid diet. He believes that whatever food we put into the stomach if it is digestible and the stomach is digesting, will reach the seat of the typhoid lesion in the same state of fluid ity, whether it is milk, beefsteak, bananas, or what not. If the stomach is not digesting, the patient will not be hungry, and, consequently, according to his rule, solid food will not be given to him. Dr. Barrs here refers to the fact that milk is, at a certain stage of its digestion, just as much solid food as meat is, and sometimes it passes into the intestine and on to the typhoid lesion in its solid state, and remarks that milk is not quite devoid of this supposed danger. He believes, also, that it will be generally admitted that a diet consisting of a normal proportion of wholesome solid food (meat and bread) is much less likely to give rise to an excess of intestinal gas than a diet consisting exclusively of fluids. He suggests that solid food alone can not be a cause of perforation, or perforation would not occur when the diet was so strictly regulated as it is.

He believes the general experience to be that the majority of patients die from conditions such as cardiac failure, lung complications, and all the other devastating effects of general infection, against which the patient can set only such powers of resistance as he possesses, which will be more or less effectual according as we have maintained his general nutrition by food, and diminished the other effects of the wear and tear of his disease by all means in our power.

There is, he continues, in the treatment of typhoid fever too great a tendency to treat the intestinal lesion at the expense of the individual, or, if not that, to make the temperature chart the sole arbiter of our practice.

Dr. Barrs states that he has not hitherto urged any reason for the plan which he advocates beyond the fact that it involves the least departure from the normal line of health, but he is prepared to urge that it is a method which is likely to modify favorably the death-rate of typhoid fever, to shorten convalescence, to diminish the risks of complications and sequelæ, and generally to make typhoid fever a less formidable and more manageable disease than it is under our present standard methods of treatment.

The Action of Diphtheria Toxine and Antitoxine on the Bone Marrow.—The *Gazette hebdomadaire de médecine et de chirurgie* for January 14th publishes a report of the proceedings of a recent meeting of the Société anatomique at which M. Roger and M. Josüé gave an account of their investigations as follows: In the first series of experiments the animals received from two to four drops of a very active toxine; in the second series they received a cubic centimetre of the antidiphtheritic serum; and in the third series they received the toxine and the serum together.

The rabbits which received the toxine presented at the end of twenty-four hours a manifest proliferation of cells of the medulla, more pronounced at the periphery and affecting especially the small medullary cells. After forty-eight hours the increase in the number of cells was much more considerable, but it was especially the large and medium-sized medullary cells which were multiplied. After four days the entire section presented a layer of cells, with complete disappearance of the areolar tendency, intense congestion, and thickening of the fibrils.

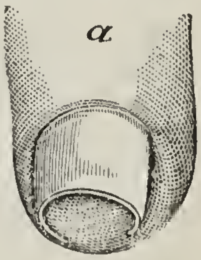
When the bone marrow of a rabbit which was killed wenty-four hours after an injection of antidiphtheritic erum was examined, much more pronounced changes were found than were ascertained in the first series. Proliferation was general and affected especially the mall cells, the large and the medium-sized ones having remained comparatively few in number; the myeloplaxes were very abundant. After forty-eight hours the general appearance was the same, but the cells were more abundant. Contrary to what had been observed in the poisoned animals, it was not the large cells, but the small elements, which had increased in number. After four days the proliferation was enormous, but the areolar appearance was preserved; there could be seen only the beams which limited the fatty cavities infiltrated with small cells and highly colored.

In the animals which had received the toxine and the serum together the changes of the bony medulla followed an intermediate course; the proliferation affected especially the small cells, but the predominance was less pronounced than in the animals which had received the antidiphtheritic serum, and more pronounced than in those which had received the toxine. The thickening of the fibrils was less than in the latter.

Congenital Obesity.—The *Indépendance médicale* for January 13th publishes a report of a recent meeting of the Medical Society of Berlin at which Dr. Heubner presented a little girl, eight months old, who weighed thirty-nine pounds. The cause of this enormous increase in weight lay in the fatty development, which was especially manifested in the skin of the chest, of the abdomen, and of the extremities; it was not so marked in the cheeks, the head, and the internal organs. The father and mother of this child were each twenty-seven years old; there had never been any abnormal obesity or nervous disease in the family. The pregnancy of the mother had been complicated by pain in the right side during the last weeks; the confinement had not been laborious, as the child's head and other parts had not been abnormal in size. The child's mental development was not retarded; it could sit up alone, and was beginning to stand; it was very fond of coffee.

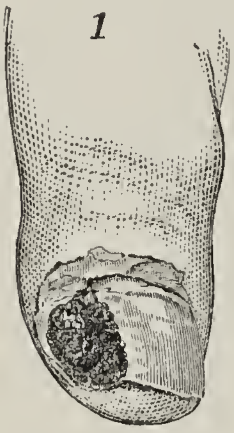
Concerning Toe Nails.—*Two or Three Stub-straws from a Medical Field, by Garner Superfluous, M. D., etc.*—Cases of toe nail actually and persistently *growing in* for years without harm are not often reported in medical journals. Nevertheless, such cases do exist, perhaps frequently—patients often disliking an exhibition, and persons generally seeming to think it worse than needless to show a doctor any peculiarity unless pain disables or danger threatens.

The accompanying figure (*a*) shows such a case very clearly. A few words may complete the story. The patient, an old man, discovered the matter thirty or forty years ago, but, as it seemed harmless, he thought no more about it. It has given absolutely no trouble since then, and would be entirely forgotten were it not for some little inconvenience in paring the nail. The points may sometimes be brought almost together, but usually stand a few lines apart. The patient, an active man and constant walker, has never found any inconvenience from it in any kind of boot or shoe. This case shows at least that a real ingrowing nail does not necessarily produce a sore toe.



There is, however, a serious malady which has been very generally attributed to ingrowing nail, though the latter is usually, perhaps always, innocent. Why such a disease should affect the great toe only has certainly not been explained, nor why an equally malignant disease called *ainhum* should in some torrid countries attack only the *little toe.* With us it is the great toe to consider, and we can often remove its disease;* no cure has as yet been found for *ainhum.*

By a singular chance the writer has recently seen a toe which was attacked by this disease in an acutely aggressive form and operated upon in 1872, more than twenty-five years ago. The disease came without known cause, and in a few days disabled and laid up the patient. No time was lost, and an operation was performed as soon as practicable. Fortunately, a figure (Fig. 1) then taken of a photograph has been preserved and figures (*b* and *c*) have been made from photographs taken in a snap shot of the toe and its mate as they now exist.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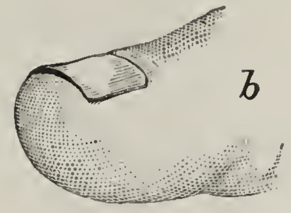
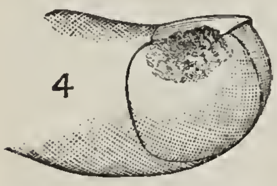

b

c

After the operation (for description of this case see *Boston Medical and Surgical Journal,* January 2, 1873) the patient was soon at work, and has had no trouble from the malady up to the present time. It may be added that there remains scarcely any visible cicatrix of the operation, and it can be found only on very careful examination. The two toes are equally shapely, though the one operated upon may be a trifle smaller—perhaps from what it lost, which was considerable, in the operation (diagram marked 4, drawn for another case, will indicate the amount removed), or possibly the difference was congenital.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As the relief in this case seems to have been complete and continuous for a quarter of a century it may well be considered *radical.*

All these things have been, and are still, by the profession, and may be now by some physicians, *rated* as very small matters, but they disable patients, causing some to become bedridden and others to be hopelessly crippled and dependent upon charity; besides, the sufferers themselves never thought such ailments small matters, but in their anguish have emphatically expressed an opposite opinion, in full accordance with Sydenham when he recorded . . . "ratus . . . quantulamcunque in hoc scientiæ genere accessionem, etsi nihil magnificentius quam odontalgiæ aut clavorum pedibus innascentium curationem edoceat, longe maximi faciendam esse præ inani subtilium speculationum pompa." . . . (*Op. om.,* Obs., med. II, cap. II, § 47.)

UMBRA.

The Reduction of Infant Mortality.—The following letter from Mr. Nathan Straus to the State and municipal boards of health throughout the United States has been handed to us for publication. Considering the importance of the subject and the general interest felt in the results of Mr. Straus's work, the length of the communication does not call for apology.

To the Board of Health:

GENTLEMEN: Some eighteen months ago I took the liberty of addressing a letter to the mayor of every city in the United States, setting forth at some length my conviction of the absolute necessity of making the supply of sterilized (pasteurized) milk for the children of the poor an object of municipal solicitude. I received sympathetic responses from so many quarters that I am encouraged to believe in the existence of a widespread interest in the subject. I feel it, therefore, to be my duty to supplement the appeal then made by a more complete and exact statement of the reasons which prompt me to believe that there is no field of public effort whose neglect admits of so little excuse. I address this communication to you as the agency of local government whose purpose it is to provide against all preventable loss of human life and to enable the people, from childhood to age, to live under sanitary conditions alike as to their food supply and their surroundings.

It is hardly necessary to call your attention to the fact that the most thorough systems of public inspection of milk are almost solely directed to the detection of two abuses—skimming and adulteration with water—and to cutting off the supply of one kind of diseased milk—that drawn from tuberculous cows. The latter duty is usually performed by State officers; the former is an exclusively municipal function. The public inspection of milk in the United States is thus directed mainly to the prevention of fraud and rarely, if ever, to the discovery of pollution. Except as to the stamping out of tuberculosis, considerations affecting the public health receive only incidental attention. As Professor Sedgwick said some years ago in regard to Boston, "public milk supplies may not be legally watered, but they may be stale, or polluted, or infected." May I be permitted to echo his query as to whether the time has not come when we should no longer be satisfied with chiefly preventing the cheating connected with the adulteration of milk or its dilution with water?

The statement is made on the excellent authority of Dr. Shakespeare, of Philadelphia, that nearly if not quite one half of the deaths in the cities, towns, and villages in this country are due to the class of diseases which are known to be preventable. He adds that the present annual mortality from the ordinary preventable diseases fails to impress the public mind, partly because it is so common, but mainly because of the customary and long-continued inaction of the medical profession in matters relating to public sanitation. Chief among this preventable class of diseases are the diarrhœal disturbances of young children, and the prime agent in the production of these is impure milk. These disturbances prevail among infants pretty much in the proportion in which such milk constitutes their food. They are related to a group of symptoms which medical science has declared to admit of no other satisfactory explanation than that they are of toxic origin, due to the absorption from the intestines of ptomaines produced by bacteria. The causative factor, in short, of these disturbances is bacteria, and these act in most cases by inducing changes in the food. It is nonsense to argue that because healthy adults may drink polluted and stale milk without injury, invalids and infants may do the same. Milk is babies' proper food, but the milk with which they are fed is too often a fluid in which the germs of disease and death have taken the place of Nature's most perfectly combined elements of nutrition. Samples of average city milk, perfectly good according to all the customary tests of color, taste, smell, and the galactometer, have been found to contain 2,350,000 bacteria to the cubic centimetre, or more than twice the amount of the bacterial contents of the same quantity of city sewage.

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* See *New Reference Handbook of the Medical Sciences,* Wood & Co., New York, 1887, vol. iv, p. 36.

Thus a fluid possessing almost ideally perfect qualities for the preservation of health and nutrition may by easy and rapid stages of pollution become a deadly agent in the propagation of disease. Were the precautions taken to secure cleanliness in cow stables and in the clothing and persons of the milkers tenfold greater than they are, a wide-mouthed pail held under the shaken udder would be necessarily a receptacle for many impurities. What actually takes place in almost uniform practice is that this rich animal fluid, sterile and presumably wholesome at the start, but drawn by unclean hands into half-cleaned pails, and meanwhile sprinkled from above by the dust of the stable, by hairs, dandruff, dirt, and particles of excrement from the skin and udder of the cow shaken by the milker or brushed by his hat, becomes infested with organisms. That these multiply swiftly and enormously in the warm and rich fluid, well aërated by the act of milking, is also a natural consequence of favorable conditions; and if we allow time, as has been well said, the wonder is not that it contains so many germs, but rather that it is still potable at all.

I hold, therefore, that there is practically no milk delivered for general consumption in cities that is fit to be fed in its natural state to young children. There is no system of tests capable of application that can alter this fact, and the tests in actual use do not touch it at all. If proof of this assertion were needed, a glance at the abnormal infant death-rate of any of our great cities would amply bear it out. In New York city the recorded births of the three years 1890–'92 were 135,602. Allowing for the fact that only five sixths of the whole are believed to be reported to the board of health, the actual number may be placed at 162,721. During the same period the deaths of children under five years of age were 52,213, or over thirty-two per cent. of the whole number of births. That one child out of every three that were born should die before attaining the age of five, is in itself a most significant and alarming fact. The further fact that from fifteen to eighteen per cent. of all these deaths occurred in the five weeks between July 3d and August 6th indicates the true source of the trouble. In 1891 the number of infant deaths in these five weeks was 2,658; in 1892 it was 3,440, an increase of 782. Coming down to the specific causes, we find that diarrhœal diseases accounted for nearly one half of the whole. In the five weeks in question, the deaths of children under five from this cause was 1,209 in 1891 and 1,617 in 1892.

Here, then, was evidence of a steadily increasing infant mortality in the hottest season of the year, traceable to a cause usually associated with the poisons bred in cow's milk, more abundantly at that season than at others. It was not a violent assumption that much of this mortality was preventable, and that the most direct and effectual method of prevention was to put milk suited for infant nutriment within the reach of the poorest. After making a thorough examination of the subject, and taking counsel with physicians at home and with some who were accepted as authorities in Europe, I began to experiment in 1893 as to what could be done with one milk depot. I found medical testimony absolutely unanimous as to the requirement of perfect sterilization (pasteurization) for all milk intended for infant food in cities. A sterilizing laboratory was accordingly established, and the sale of pure milk both in its natural and sterilized form was begun in one of the most thickly populated districts of the city. The system of sterilization (pasteurization) adopted was that prescribed by Dr. Rowland G. Freeman, of New York, in which are combined the preservation of the nutritive qualities of the milk and the complete destruction of all noxious germs. The first year's experience showed me that the indirect results of my efforts were quite as valuable as those that could be directly traced to them. The standard of quality of the milk supply of the poor had been raised within the whole area adjoining my depot, the people being quick to discern the superiority of the pure article furnished at a low price over the more or less tainted and also more costly one they had been accustomed to use. During the hot term I also sold milk in its natural state at a cent a glass, in booths which I was permitted to erect in the public parks. The visiting physicians of the board of health and all physicians doing charitable work among the poor have been, from the beginning of my work, supplied by me with all the sterilized and modified forms of milk which they required, free of expense.

It was found, as the result of the first year's experiment, that the use of sterilized milk was a matter of education. There was at first a suspicion of medication about it in the minds of the poor people for whose babies its use was most urgently needed, and the fact that the doctors began to recommend it tended to associate it in their minds with drugs. This prejudice has, however, entirely disappeared. I had a special preparation for babies' food made according to a formula supplied by Dr. Freeman. To this I added another in the following year from a formula supplied by Dr. A. Jacobi, and both have been sold in my depots ever since in six-ounce bottles at a cent apiece. In addition to these modified milk foods, barley flour has been sold. This is intended to meet a want keenly felt by the poor, of wholesome nutrition at a price within their means for children beyond the infantile stage. The milk is iced in transportation and kept on ice till it is turned into the bottles for sterilizing. It has been a rigidly observed rule that, without respect to demand, no bottle of sterilized (pasteurized) milk should be sold twenty-four hours after the process of sterilization. Experience has taught my staff not a little as to the details to be observed in the effort to secure the most perfect results, but these are the main lines on which the business has been conducted.

In 1894 preparations were made to supply natural, pasteurized, and modified milk on such a scale and at as many different depots as might make a distinct impression on the milk supply of New York, and so reduce the sum of its infant mortality. The character of the summer was well calculated to put the experiment to a severe test. The average temperature of the latter part of June, of the whole of July, and of part of August was unusually high, and much higher than that of the preceding year. For the first quarter of the year, the mortality of children under five showed more than the proportionate increase which might be expected from the increase of population, which was about three per cent. per annum. There were 4,108 children's deaths in the first quarter of 1894, or ten per cent. increase. For the second quarter, the deaths in 1893 numbered 4,386, and in 1894, 4,483, and, as in the last half of the quarter my six milk depots were open, I was encouraged to believe that the arrested increase might in part be due to their influence. The mortality statistics for July and August confirmed me in this belief. For July, 1893, the deaths of children under five numbered 2,796, while for the same months of 1894 they were only 2,562. In August, 1893, they numbered 1,686, declining in the same month of 1894 to 1,559. Thus, instead of the increase of ten per cent. in the mortality of children with which the year had started, the two most fatal months of the year showed a decrease of 8.3 per cent. The deaths under five years for July and August, which, had they followed the rate of increase established in the first quarter of the year, would have numbered 4,930, were only 4,111. Here was an apparent saving of 819 lives in two months, or a decrease of the toll levied by death on the children of New York of sixteen out of every hundred.

In the experimental season of 1893 my one depot was open from June to November, and from it were sold 34,400 bottles either of pasteurized milk or of the modified mixture for infant feeding. In 1894 the six depots were open on May 14th, and were kept open to the end of the hot term. From one of them the supply was at the disposal of the public till the end of the year. The service was thus made a continuous one, and has been one since so maintained, with six depots, in addition to the open booths in the public parks, open during the hottest period of the year, and the central depot open all the year round. The sales for 1894, between May 14th and December 31st, aggregated 306,446 bottles of the pasteurized milk and its modifications. In 1895, between January 1st and December 31st, the sales were 589,064 bottles, and in 1896 the total for the year was 658,064 bottles. In the year before the work was seriously begun, 1893, the deaths of children under five during the two hottest months of the year were, as we have seen, 4,482; for the year just closed, 1896, they were 4,126. Meanwhile the population of the city had increased from 1,758,000 on July 1, 1893, to 1,934,077 on July 1, 1896. That is to say, there had been an increase of the population equal to fully ten per cent., and a decrease of children's deaths in the two most fatal months of the year equal to eight per cent. Had the deaths for July and August of 1896 been in the same proportion as those for the same months of 1893, they would have numbered 4,930 instead of 4,126, a clear saving of 804 lives, or sixteen out of every hundred, in two months. As the rule in the past has been that this class of deaths increased more rapidly than the population, even these figures do not tell the entire story.

The experience of Brooklyn is, if possible, more significant of the value of the pasteurized milk foods as a preventive of infant disease and death than that of New York. Ten years ago, Brooklyn had a decided advantage over New York in the possession of a much lower rate of infant mortality. This advantage became gradually less till it not only disappeared, but left New York apparently a more wholesome abode for children than its twin sister across the East River. In 1894 the proportion of deaths of children under the age of five to the whole number of deaths was 42.6 per cent. in New York and 43.6 per cent. in Brooklyn. The disparity was not decreased in 1895, and with the opening of the summer of last year the Brooklyn board of health became still more impressed with the tendency of children's deaths in New York to show a decrease on those of previous years, while with them the tendency appeared to be the other way. In searching around for reasons to explain the lessened infant mortality of New York, they concluded that it was mainly due to the use of pasteurized milk nutriment. They accordingly applied to me for help and advice. As the most practical way of answering their appeal, I offered to supply them, free of charge, a thousand bottles a day of pasteurized milk and its modifications, leaving to them to provide the machinery of distribution. In point of fact, in the thirty-eight days from July 29th to September 4th, in which they distributed these milk foods, they received, in all, 42,739 bottles from my New York laboratory.

The result is indicated in the report of the board for 1896, as follows: "The milk was distributed in the various stations of the Diet Dispensary, of which there are five in the city, and was supplied gratuitously to the poor on prescription, precedence being accorded to orders emanating from members of the summer corps, who used a special form. Although this work was not begun until the end of July, and was terminated on the 4th of September, upward of 40,000 bottles of pasteurized milk were dispensed, with the result, as indicated by statistics, of substantially reducing the death-rate from infantile diarrhœa." In the same connection the following sentences from the report on vital statistics of Dr. George E. West, the secretary of the board, will be found suggestive: "The only notable increase of deaths during the present year, as compared with the previous one, was due to the intense heat of the first half of August, the deaths ascribed directly to this cause having reached the wholly unprecedented number of 333, of which 215 were reported during the single week ending August 15th. In spite of the almost intolerable heat, the deaths from diarrhœal disease in infants diminished markedly in August, which fact is significant when it is remembered that the gratuitous distribution of sterilized milk was begun at the end of July."

From more detailed statistics furnished by Dr. West it appears that in the four weeks from June 30th to July 28th the deaths of infants under two years of age from diarrhœal diseases had been at the average rate of 148 a week, rising in the third week of the month as high as 184 deaths. In spite of the "intolerable heat" of the first half of August, the number of infant deaths fell in the first week of the distribution of pasteurized milk to 82, and in the next to 86, and in the five and a half weeks during which the distribution was kept up the weekly average of infant deaths was reduced to 73, or less than half what it was in the cooler and, for the last year at least, less fatal month of July. The results are no less remarkable when the deaths of children under two from diarrhœal diseases are compared with the total number of deaths at all ages and from all causes. Beginning with the last week of June, these infant deaths accounted for twenty-two per cent. of the whole mortality of the city. They were twenty-three per cent. in the first week of July, twenty-eight per cent. in the second, twenty-seven per cent. in the third, and twenty-one per cent. in the fourth. The percentage fell to eighteen with the introduction of pasteurized milk in the first terrible two weeks of August, dropped still lower, to thirteen per cent., in the second two weeks of the month, and was eleven and twelve per cent. respectively in the last two weeks in which the milk was distributed.

These figures are more eloquent than any words of mine can make them. They show, I think, conclusively the very intimate connection between the supply of a pure milk diet and the arrest of the process of needless infant slaughter that is permitted to go on every summer in every populous community of the land. When a few cases of cholera find their way into one of our ports there is a great outburst of public excitement and money is lavishly spent to ward off the danger. Yet there is eminent authority for the statement that there are more deaths from the preventable diseases of children occurring each year in any city in this country than the total number of deaths caused by Asiatic cholera, in the same city, from the first visitation of the Asiatic cholera to the last—that is to say, during a period of sixty-four years. Hundreds of thousands of dollars are readily spent to ward off a plague that happens to inspire people with terror; yet, here among the little ones is a most deadly form of disease numbering its victims all the year round, but attaining in the summer months a degree of virulence unmatched by any epidemic, for the most effective remedy to which not a dollar is, so far as I know, appropriated by any city in the United States.

It is to draw attention to this anomaly, and to ask your co-operation in trying to remove it, that I have addressed this communication to you. The fact that the appeal is made on behalf of humanity must be my apology for troubling you with it. To the practical question of how much it would cost to place pasteurized milk and its modifications at a nominal price within the reach of those who in a given community need it most, it is difficult to give a satisfactory answer. I have merely to repeat what I said on this subject in a former communication to the mayor of your city. I set out with the definite purpose of reducing the infantile death-rate of the city, and all considerations of expense were held subordinate to that main object. In bringing the work to its present stage of development I have spent a good deal more money than I should were it to be done over again in the light of acquired experience. Then, the conditions of no two localities as to transportation, distribution, and handling can be alike, and these figure largely in the element of cost. While, therefore, I may safely profess to be able to speak with authority as to the best processes of preparation, bottling, etc., I should hesitate to give an opinion as to the number of bottles that could be filled for a given expenditure.

The fact is that much good can be done by a very simple plant and by the most modest expenditure. A more or less elaborate equipment is, of course, necessary for doing the work on a large scale, but it is, perhaps, better that this should be a growth from tentative efforts confined within a limited area than that it should be adopted at the start. Any person of moderate intelligence can become thoroughly familiar with the methods and processes of my sterilized milk laboratory in less than a week, and can readily apply the knowledge thus acquired to the duplication of its work on any scale that may be attempted. I shall be glad to give any such person, duly accredited to me by you, free access to every department of my now completed system of preparation and distribution, and all possible data needed to guide him in adapting the work to different conditions. I know of no other way in which a satisfactory trial of its benefits can be secured than by personal investigation and preparation. Should there be a desire to make such a trial under your auspices, I beg that you will consider all I am able to show of the practical working of the system entirely at the service of any one whom you may be pleased to designate.

I think I have shown that, as a means to the saving of human lives, there is no form of sanitary precaution comparable to the general use of pasteurized milk for infant food. As I am addressing a body of men who count every diminution of the death-rate as the most convincing demonstration of their usefulness, it should need no argument to convince them that this is a legitimate field for them to occupy. It can hardly be a fact indifferent to any of us who have the common instincts of humanity that there should exist within reach of our efforts of prevention a vast aggregate of constantly recurring suffering and death. The tragedy of needless infant slaughter, desolating so many homes and wringing so many hearts, lies like a dark shadow on our boasted civilization. It is nothing more or less than permitted murder for which the responsibility must lie at the door of the agencies of government that fail to recognize its existence and demand its prevention. The necessity is too great to be adequately met by private effort. Nothing short of an organization as broad as the area of milk consumption will meet the case, and this only public authority can supply.

I have the honor to be, yours respectfully,

NATHAN STRAUS.

The Active Principle of Indian Hemp.—In the *Lancet* for January 23d there is an article on this subject by Mr. C. R. Marshall, who remarks that the want of uniformity in the preparations of Indian hemp has so often led to serious consequences in practice that many practitioners have discarded the drug as worthless or dangerous. Others, finding it of benefit in certain diseases, have expressed a hope that some means of standardizing the preparations would be discovered or the active principle of the plant isolated. Of the two conditions, the isolation of the active ingredient is the more important and its use is more likely to lead to uniform results in treatment. Quite recently such a pure active product has been obtained, and the mystery which has hitherto enveloped Indian hemp seems in a fair way to being cleared up. Many points still need investigation, the most important from a medical point of view being the gradual change which cannabis compounds undergo by keeping. Both by practical experience and by scientific experiment it has been shown that the active ingredient gradually loses its power, and at present we know of no means of preventing this. A very interesting case of this loss of activity is described by Thomas Smith. He found that cannabin, which, when freshly prepared, produced a narcotic effect in doses of two thirds of a grain, after exposure to the air for three years became absolutely inert. In India, it is said, dealers in this drug refuse to buy the old crops after the new ones are gathered, and after two years the crops are publicly burned in the presence of an excise officer. The cause of this growing inertness is probably due, as Leib Lapin suggests, to the oxidation of the active ingredient. He mentions experiments in support of this view, but these are not sufficiently convincing. Age, however, will not account in all cases for the uncertainty of commercial preparations. Oftener it is due to the more or less inert natural products from which these preparations are made. That the physiological activity of the hemp plant varies with the locality in which it is grown is well known, and it has been suggested that the *gánjá* of Bombay and the Central Provinces, which is "infinitely inferior" to that of Bengal, finds its way into European pharmacy. "There is also good reason to believe that the Indian hemp merchants, who deal with the drug in the first instance as an article of excise consumed locally, are ir the habit of supplying to the European drug exporter or his agents samples for which, owing to the partial or complete loss of activity, they can no longer find a native market."

The first European, says the author, to investigate with any degree of scientific accuracy the action of Indian hemp was O'Shaughnessy, in 1839. He used an alcoholic extract made by boiling freshly prepared *gánjá* with rectified spirit in a Papin's digester and evaporating the spirituous extract to dryness on a water bath. The substance thus obtained was very active; half a grain produced a distinct effect, and a grain and a half was considered by O'Shaughnessy a large dose. In 1846 the resin in a state of comparative purity was obtained by T. and H. Smith, and they gave it the name of cannabin. It was extremely active; two thirds of a grain produced narcosis, and a grain, decided intoxication. In 1848 De Courtive also isolated an active resin.

Notwithstanding the investigations of O'Shaughnessy, Smith, and De Courtive, it was thought that cannabis might contain some alkaloidal principle. Preobraschensky, in 1876, obtained nicotine from a specimen of hasheesh procured in Turkestan and from the flowering tops of the plants. As cannabis preparations are usually smoked in combination with tobacco, Dragendorff and Marquiss suggested that the nicotine was derived from admixture with this substance—a supposition proved by Siebold and Bradbury (1881) and Kennedy (1886). Although Kennedy failed to obtain nicotine, he was of opinion that an alkaloid was present, and Siebold and Bradbury also isolated a varnishlike base which they termed *cannabinine*, which gave alkaloidal reactions. The substance had an odor of coniine, but was not identical with it. Only two grains were obtained from ten pounds of the drug. Arutinianz and Masing, on the contrary, obtained no alkaloid. In 1883 Hay discovered an alkaloid which produced tetanus in frogs, to which he gave the name of *tetano-cannabine*. It was present in very small amount and its elementary composition was not determined. His results led him to believe that other alkaloids were present, but these do not appear to have been isolated. Denzel (1885) also obtained a tetanizing alkaloid from hemp, but Warden and Waddell (1884), working on large quantities of material, obtained no such compound. It is only fair to state, says Mr. Marshall, that the process employed was slightly different from Hay's, and a cat instead of a frog was used to determine its effect. A nicotinelike substance was obtained, but this proved to be physiologically inert. Jahns (1887) also states that *tetanin* does not exist. More recently (1891) H. F. Smith has isolated an alkaloid resembling coniine from Indian hemp, but in such small quantity (0.75 milligramme to the kilogramme) as to render it therapeutically unimportant. Still more recently (1895) Marino-Zuco and Vignola have prepared an alkaloid from various parts of *Cannabis indica* and *Cannabis sativa*, but neither alkaloid possesses the characteristic action of cannabis compounds. Physiologically, they are cardiac depressants, the alkaloid from cannabis indica being much the more powerful. The most recent investigators, Wood, Spivey, and Easterfield (1896), have failed to obtain any alkaloid from charas, and the bulk of evidence is therefore against the view that the effects of cannabis are due to an alkaloidal principle. In 1887 Jahns obtained a crystalline base which he subsequently recognized as choline. He pointed out that chemically this body would explain the alkaloidal base obtained by previous observers, but it differs in crystalline form and solubility in ether from Hay's tetano-cannabine; physiologically, also, their action is different.

Of the more recent investigators, Warden and Waddell seem to have begun upon the right lines. They argued that, as many of those addicted to the hasheesh form of intemperance obtained the intoxicating effects by smoking the plant in a pipe, it was to be expected that destructive distillation of the freshly prepared resin might yield up the active principle. They therefore made an alcoholic extract of the plant, added excess of caustic potash, and distilled. An amber-colored oil came over, which, by exposure to the air or by the action of alkalies, rapidly assumed a dark brown color. The oil contained ammonia, phenol, and other products of destructive distillation, and was "devoid of narcotic and irritant properties." A drachm administered to a cat produced no sensible effect. Leib Lapin (1894) isolated a substance which he termed *cannabindon*, and this appears to possess the physiological action of fresh cannabis preparations. He obtained it by warming the plant with milk of lime and extracting with ether. The ethereal extract he treated successively with acetic ether, alcohol, petroleum ether (twice), and water, the precipitate being rejected each time. The second and third fraction obtained by precipitating with water contained impure cannabindon; this he subsequently purified. Last year, Cowan Lees expressed a belief that watery extracts contained some active ingredient of cannabis.

As we should expect from its method of preparation, says Mr. Marshall, the resin is extremely stable. It yields monoacetyl and monobenzoyl derivatives and is unacted upon by alcoholic potash, and, below 150° C., by hydriodic acid and phosphorus. It is insoluble in water, but soluble in alcohol, ether, benzene, and organic solvents generally. It appears to be the active constituent of the drug, and the authors have succeeded in isolating it from several cannabis preparations in the market—viz., from Smith's cannabine, eighty per cent.; Merck's cannabinon, fifty per cent.; Merck's ethereal extract, twenty-six per cent.; and Merck's cannabis resin, twenty per cent. As the compound contains at least one hydroxyl group the authors recommend the name *cannabinol* for it.

As previously mentioned, all samples of charas are not of the same quality. From a second sample of this substance, undoubtedly inferior to the first, Easterfield and Wood were only able to extract fifteen per cent. of cannabinol. Another sample of charas sent to Mr. Marshall by his friend, Surgeon-Lieutenant John Stephenson, I. M. S., and obtained in the cantonments at Peshawar, was of intermediate quality. Various other preparations of cannabis indica (Merck's, Bombelon's, Denzel's, Gastinelli's, etc.) are known, and even largely used, but as these have not added much to our knowledge of the chemistry of this body Mr. Marshall does not mention them further. By oxidizing cannabis resin with nitric acid Bolas and Francis (1868) obtained a crystalline substance, oxycannabine ($C_{20}H_{20}N_2O_7$), but the physiological action of this compound was not determined. Flückiger failed to obtain it.

The author states that the substances isolated by Wood, Spivey, and Easterfield were sent to him for a pharmacological investigation, which he hopes to complete in time and give a full account of the pharmacology of this drug. He gives a detailed account of some personal experiments which he undertook merely to establish the activity of cannabinol and introduce it into therapeutics. During the action of cannabinol his pulse rose from 60 to 90 a minute, sensibility, determined by pinching, was blunted, and his appearance was described as ashy pale. The pupils were somewhat dilated, but throughout reacted to light and accommodation. He does not remember having had hallucinations at any time; no unpleasant after-effects were experienced, and he says the drug appears to possess no constipating action.

Cannabinol, continues the author, has been used in a few cases as a hypnotic, and with success, but at present he does not wish to discuss its uses as a medicine, or even to recommend it as a remedy. All that is maintained for this substance is that it is active and pure. Whether it will change by keeping or not time alone can tell.

The Value of Secondary Physical Signs in the Diagnosis of Valvular Heart Disease.—In the January number of the *Cleveland Medical Gazette* Dr. Robert H. Babcock, of Chicago, relates the following case:

On June 25, 1896, a man presented himself to the author with a letter from a physician stating that the bearer had an interesting cardiac lesion which had been the subject of considerable controversy, and that he was sent in the hope of having the diagnosis cleared up. A perusal of numerous letters from medical men in Chicago and various other cities, says Dr. Babcock, disclosed an amusing variety of opinions, and as his examination subsequently showed, the diversity in the diagnoses was due to the dependence placed upon cardiac murmurs without a just appreciation of the secondary physical signs. The patient, a Polish Jew, aged twenty-nine years, gave a history of four years spent as a political exile in the mines of Siberia, from which he had escaped two years and nine months before. In January, 1894, he suffered from an attack of inflammatory rheumatism, from which his present cardiac disease probably dates. His chief symptom was dyspnœa on exertion, such as walking up stairs. Appetite and digestion were reported good and the bowels regular; the urine was not examined.

There was marked turgescence of the peripheral veins and capillaries; heaving cardiac impulse at the left of the sternum; slight epigastric pulsation; apex beat in the fifth interspace, three inches and a quarter to the left of the left sternal border.

The apex beat was heaving or thrusting; the pulse seventy-five, regular, and collapsing; capillary pulse.

There was absolute cardiac dullness, which began at the third left intercostal space and reached from the right sternal border to the left nipple; relative, at the evel of the second left intercostal space, which reached an inch and a half to the right of the sternum and three nches and a half to the left of the sternum, and downward to the upper margin of the sixth rib at the left parasternal line; at the level of the fourth space it exended transversely from an inch and a half to the right of the sternum to three inches and a half to the left of hat bone; the lower line of deep-seated cardiac dullness an downward from the lower border of the fifth right ostosternal articulation to the upper border of the sixth eft rib at the apex beat. The outline was, therefore, qually as broad through the auricles as through the venricles, while the apex of the left ventricle reached only he width of one intercostal space lower than the base f the right ventricle did. Hepatic dullness in the erect osition reached from the fifth rib, right mamillary line, o an inch or more below the costal arch.

With the patient standing, the first sound at the pex was of low pitch, the second weak and at times split; the first sound in the aortic area was muffled, the second delayed and impure. The pulmonary second sound was accented. There was a musical systolic murmur which was loudest over the lower portion of the sternum and to the left, but audible from near the right nipple to the middle of the left axillary region and up to the first space; here it was feeble and not transmitted into the neck; in the aortic area there was a faint systolic and diastolic murmur wholly different in character from the musical one just described. In the dorsal decubitus there was a musical murmur as before, but, in addition, there was a low-pitched systolic murmur in the mitral area and the aortic area, and heard distinctly in the cervical vessels, also a faint, short, diastolic murmur following the aortic second sound and audible more feebly at the apex. A systolic tone was also heard in the femoral arteries. The sphygmographic tracing was characteristic of aortic insufficiency.

The diagnosis was that of chronic endocarditis affecting the mitral and aortic valves and leading to aortic and mitral insufficiency; secondary hypertrophy and dilatation of both left and right auricles and ventricles; passive visceral congestion; compensation good.

If in this instance, says the author, we were to depend on auscultation chiefly, error would be almost inevitable, as indeed was shown by some of the letters presented by the patient. The double aortic murmur was quite characteristic and hardly required the Corrigan pulse, capillary pulsation, systolic femoral tone, and enlarged left ventricle to establish the diagnosis of aortic insufficiency. The rock on which some split, however, continues Dr. Babcock, was the musical murmur, which, being systolic in time and of maximum intensity at and about the ensiform appendix, led them to diagnosticate tricuspid regurgitation. In the light of the secondary physical signs, he says, this is plainly an error. The only physical sign pathognomonic of regurgitation through the tricuspid valves is the systolic venous pulse which, for obvious reasons, is most plainly detected in the external jugulars. In some instances there is also systolic venous pulsation of the liver. Such systolic jugular pulsation is diagnostic of tricuspid insufficiency, even if a murmur is inaudible, whereas a systolic murmur heard most distinctly in the tricuspid area may, as in the present case, be mitral in origin and for some unknown reason be transmitted with unusual intensity to the lower end of the sternum, or manifest a phenomenally large area of propagation. It is not unlikely, the author thinks, that in the case reported the musical murmur is caused by a vegetation swinging back and forth in the blood stream, and that the maximum audibility of these vibrations in the tricuspid area, rather than in the mitral area, depends on a conjunction of unusual conditions. It may be conjectured that the location of the vegetation is such that the vibrations are transmitted along the interventricular sæptum and the walls of both ventricles and thus furnish an unusually wide area of propagation. It is conceivable also, he says, that the abnormal blood pressure within the left ventricle has caused a deviation or bulging of the interventricular sæptum into the cavity of the right ventricle in such a manner that the stream of blood thrown into soniferous vibrations by the swinging vegetation swirls or eddies along the hollowing sæptum and thus sends its sound-producing waves toward the apex of the right ventricle rather than toward the apex of the left ventricle. But whatever may be the explanation of its conduction into the tricuspid area, says Dr. Babcock, the murmur belongs to the mitral valves, as shown by the accentuation of the pulmonic second sound, the enlargement of the right ventricle, and the passive engorgement of the abdominal viscera and general venous system, phenomena that play no part in the symptom-complex of compensated aortic insufficiency.

The Fifteenth German Congress of Internal Medicine will be held in Berlin on the 9th, 10th, 11th, and 12th of June, under the presidency of Dr. von Leyden, of Berlin. The time of the meeting is exceptional this year. On the first day there will be a discussion on the Treatment of Chronic Articular Rheumatism (Dr. Bäumler, of Freiburg, and Dr. Ott, of Marienbad, reporters); on the second day there will be one on Epilepsy (Dr. Unverricht, of Magdeburg, reporter); and on the third day there will be one on Morbus Basedowii (Dr. Eulenburg, of Berlin, reporter). Papers are already announced as follows: Clinical and Anatomical Contributions on Acute Leucæmia, by Dr. A. Fränkel and Dr. C. Benda, of Berlin; Clinical Contributions to our Knowledge of the Metabolism of the Carbohydrates, by Dr. von Jaksch, of Prague; The Aims of Modern Medicinal Therapeutics, by Dr. O. Liebreich, of Berlin; On the Prognosis in Diseases of the Spinal Cord, by Dr. E. von Leyden, of Berlin; The Clinical Significance of Diuresis, and the Advantage of its Therapeutical Establishment, by Dr. Martin Mendelsohn, of Berlin; The Pathology and Pathogenesis of the Summer Diarrhœas of Children, with a Demonstration, by Dr. A. Baginsky, of Berlin; The Ætiology of Chronic Articular Rheumatism, by Dr. Emil Pfeiffer, of Wiesbaden; New Points of View in the Treatment of Chronic Heart Diseases, by Dr. Rumpf, of Hamburg; The Clinical Aspect of Lumbar Puncture, by Dr. Fürbringer, of Berlin; and Diabetes Mellitus in the Young, by Dr. Jacques Mayer, of Karlsbad. Notification of other papers should be made to the permanent secretary, Dr. Emil Pfeiffer, No. 4 Friedrichstrasse, Wiesbaden. The meetings will be held in the Architektenhaus, in Wilhelmstrasse; the banquet will take place in the Zoölogical Garden.

Orphol (Beta-Naphthol-Bismuth) in the Diarrhœa of Consumptives.—Dr. Goliner, of Erfurt (*Allgemeine medicinische Central-Zeitung*, 1896, No. 96), remarks that intestinal ulcerations occasioned by the breaking down of caseated follicles are not infrequent during the progress of pulmonary tuberculosis, and, as is well known, are found oftenest in the ileum. Thence the disease spreads to the colon and even to the vermiform appendix. The number of follicles affected varies in different cases, sometimes the gut is fairly sown with them over a large extent of its surface, and sometimes the malady is limited to a small region. When the cheesy central mass softens and is extruded, a follicular ulcer is formed, and its tuberculous nature is shown by the presence of granulating connective tissue containing miliary tubercles in its neighborhood. The central necrosis progresses and the ulcer extends, while connective-tissue new growth and tubercle formation advance at the margins, and thus the follicular lesions soon develop into tuberculous ulcers. Especially noticeable among the symptoms that they cause is obstinate and violent diarrhœa, more especially when the ulcers are situated in the rectum or the lower part of the colon. Irritation of the intestine of any kind almost always causes increased frequency of defecation.

The thinness of the stools is accounted for, according to Nothnagel (*Zur Klinik der Darmkrankheiten*, 1881), partly by the pathological secretion from the ulcerated surfaces, and partly by the lessened power of resorption of the diseased intestinal wall, in consequence of which the fæces are less solid than usual. When in the course of a consumption there appears an obstinate diarrhœa, the motions perhaps mixed with blood and accompanied by colicky pains, it is extremely probable that intestinal ulceration is present. If symptoms of peritonitis appear, the ulcerations are approaching the serous membrane, or they have already perforated the wall of the gut.

Our attempts to influence the diarrhœa of consumptives by intestinal antisepsis have lately been given a rational basis by Chaumier, of Tours, who has called renewed attention to the importance of these therapeutic measures. Daily experience teaches us that astringents, like opium and tannin, have no healing influence on tuberculous intestinal ulcerations. What is required is a reliable intestinal antiseptic that shall have at the same time astringent properties, thus lessening the evil effects of the micro-organisms and their products and making the mucous membrane a bad culture ground for them. The lessening of the secretion also reduces to a minimum the nutrient materials obtainable by the microbes. Orphol, or beta-naphthol-bismuth, is such a drug. It is a light-brown powder, prepared at the chemical factory of von Heyden, in Radebeul, and, though composed of oxide of bismuth and naphthol, has neither the repulsive smell nor the burning taste of the latter drug. It has an agreeable, faintly aromatic taste and smell, and contains twenty per cent. of beta-naphthol and eighty per cent. of bismuth oxide. It thus combines an active antiseptic with a powerful astringent agent. And, since in most cases of chronic intestinal catarrh abnormal fermentation and decomposition play a great part, the disinfection of the alimentary canal is an important therapeutic indication. The flatulence and distention of the abdomen, the colicky pains, and the abnormal abdominal sensations are due to the activity of the micro-organisms in the intestine. The author says he had occasion some time ago to try orphol in a series of cases of lung disease in which the patients suffered from chronic intestinal catarrh, and the result was entirely good. The stools became formed and regular, and the troublesome symptoms above mentioned disappeared.

Orphol, he says, influences the mucous membrane of the digestive tract in two ways. In the first place, it is a disinfectant, hindering the development of the bacteria. It is also an astringent by virtue of the bismuth that it contains. It is worthy of notice, also, that orphol does not, like opium and tannin, in any way interfere with the stomach, so that even patients suffering with dyspepsia bear it very well. To Chaumier is due our first knowledge of its antiseptic and astringent properties (E. Chaumier, *De l'emploi de l'orphol dans l'antisepsie intestinale*, Tours, 1896); and he explained the theory of its pharmacodynamic action. He showed that beta-naphthol-bismuth was decomposed in the intestinal canal into naphthol and bismuth oxide, an antiseptic and an astringent. A small portion of the naphthol is excreted in the urine; the rest passes ou with the fæces.

Glutol.—It is announced that Dr. Schleich has found glutol in the grated form to give better results than thos obtained with the fine powder, and that hereafter th grated form will be supplied exclusively.

Original Communications.

CONGENITAL DEFECTS OF THE LONG BONES.

By B. E. McKENZIE, B. A., M. D.,
TORONTO.

DEFECTS varying in kind and degree are not very uncommon in the long bones, and yet the literature of the subject has been very limited until recent years. The degree of deficiency varies very much. Sometimes it is only a defective bone that is absent, sometimes an entire limb, or more than one. There is no bone of the extremities which has not been found absent except the humerus.

Within the last three years several cases of this kind have come under my notice, and I have been permitted to deal with several of them with a view of making such improvement as surgery is able to afford.

The literature of the subject has not been very acccessible to me, and my account of it shall be both brief and defective. In 1890 Burckhardt collected a total of sixteen cases of defect of the tibia, ten of which described a total and six a partial absence. In 1894 Joachimsthal completed a collection of cases, up to that time making thirty-eight instances of the defect in thirty individuals. The affection in twenty-two cases existed on one side, while eight of the cases presented a total defect; of sixteen cases where the bone was absent on only one side thirteen presented defect of the right arm and three of the left.

In cases hitherto reported of defect of the tibia the condyles of the femur have been normally developed and there was a joint surface on the outer for aritculation with the fibula which was generally larger than normal. The tibial muscles were inserted into the capsule of the knee joint or into the rudimentary head of the tibia when present. The first recorded case of total absence of the tibia is by Billroth in 1861. Since that time eleven cases have been recorded by Albert, Myersohn, Pauli, Parker, Ehrlich, Thümmell, and Busachi.

Forty-five cases of congenital defect of the fibula are reported by Hoffa, and recently two cases were shown at the meeting of the Orthopædic Association in London. When this bone is absent the knee joint is generally normal; but the external lateral ligament may be absent, or the crucial ligaments, or the patella. The foot assumes a position of valgus and occasionally some of the toes are wanting—any or all of the second, third, fourth, and fifth.

Of defect of the ulna six congenital cases are reported. In only two of them was there total absence of the bone.

Partial defect of the radius occurs but seldom. Oscar Schmidt found only eight cases of partial defect, of which six were of the lower and two of the upper end. In two of the cases there were five digits well developed. In one there was also a second rudimentary thumb. Some of these cases were polydactylous. Total defect, according to Schmidt, is reported in forty-four cases. Twenty-one times it was found on both sides, and twenty-three times only on one. More recently several other cases of this kind have been reported, notably by Kermisson, Sayre, McCurdy, and Hoffa.

CASE I.—L. M., aged eight months. Dr. Addison, St. George, Ontario. Case of cleft palate, harelip, and double deformity of the legs. Examination shows that there is complete absence of the tibiæ and patellæ, contractions at the knee, and extreme clubfoot.

March 21, 1896.—Now fourteen months old. There is umbilication of the skin of the outer side of the lower end of the femur (shown in Fig. 1). Here the bone appears much narrower than normal, as if the condyles were absent. The fibulæ articulate with the outer side of the extremity of the femur and are curved, having the convexity outward. Toes and feet in themselves appear to be normal. The body, the arms, and hands are normal, except that the thumb on the left hand is rather broad and the nail is in two parts, there being a narrow nail toward each margin of the thumb and a ridge of skin between (A, Fig. 2). The index finger of each hand has a similar and narrow nail toward its radial side, which is all there is as a nail on this finger (B). No testicles found.

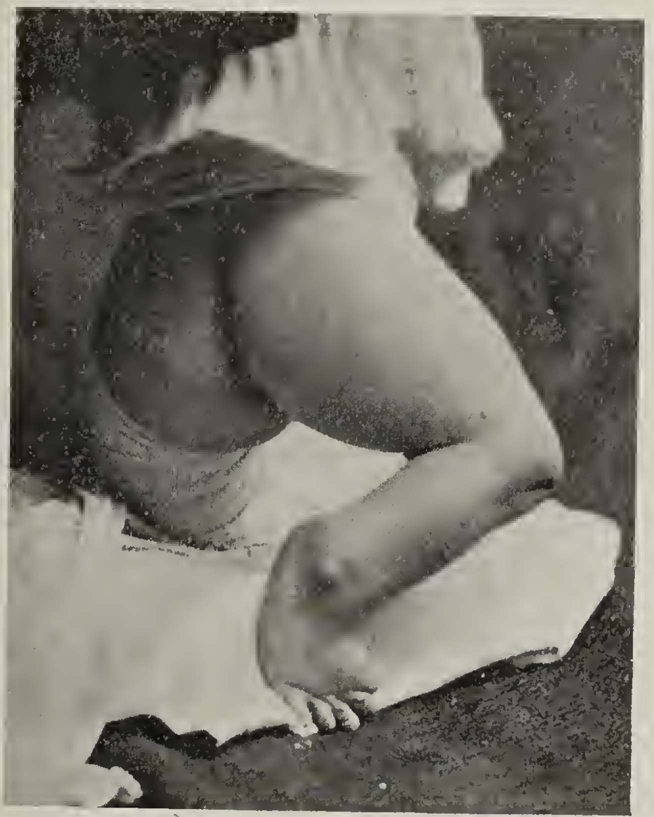


FIG. 1.

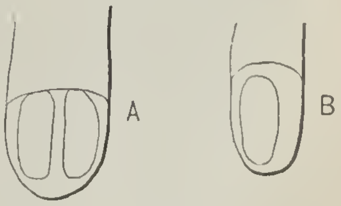


FIG. 2.

The father and mother are third cousins. A cousin of the child's mother had a clubfoot and her aunt had a harelip. The child has been developing well and seems quite intelligent.

April 6th.—Admitted to the Children's Hospital for operation, having advised amputation.

9th.—Amputation of left leg, making a long anterior flap and short posterior. The fibula, as seen in the specimen here presented, is small, short, and curved. Its upper extremity articulated with the outer aspect of the end of the femur, which was quite pointed, there being no indication of condyles present. Healing in this case was without special incident, and a good-looking stump was obtained, the scar being well out of the way for the application of an artificial leg.

May 5th.—The right leg amputated. Here there is a rather better joint than in the former. The head of the fibula comes more directly below and behind the end of the femur and there appears to be something like a synovial membrane surrounding the joint, and there are muscular fibres extending from the anterior thigh muscles down to the head of the fibula. The circulation in the anterior flap was observed to be quite poor before the dressings were applied.

12th.—The lower part of the flap is sloughing. Temperature has been ranging from 101° to 104° for the last three or four days. Are making daily dressings.

13th.—Child has measles, accounting largely for the elevated temperature of the last four days.

19th.—Stump is looking healthy and temperature normal.

Case II.—I. B., aged two years and three months. Dr. Mundell, Kingston. November 22, 1895. The child, a female (Fig. 3), presents deformity of both legs and of the left arm and hand. The right arm and hand are normal and are well developed. The child can support her weight upon the right hand, lifting her body from the floor as the hand is pressed with the open palm downward. The left hand has only a thumb and index finger which are well developed. The ulna is entirely absent. The radius appears to articulate with the humerus in about the ordinary way. Passive rotation can be made. The end of the left humerus is about three quarters of an inch in width while that of the right is an inch and a quarter. The length of the right humerus is six inches, that of the left five inches and a quarter. The right radius is four inches and three quarters in length, while the left is three inches and a quarter.

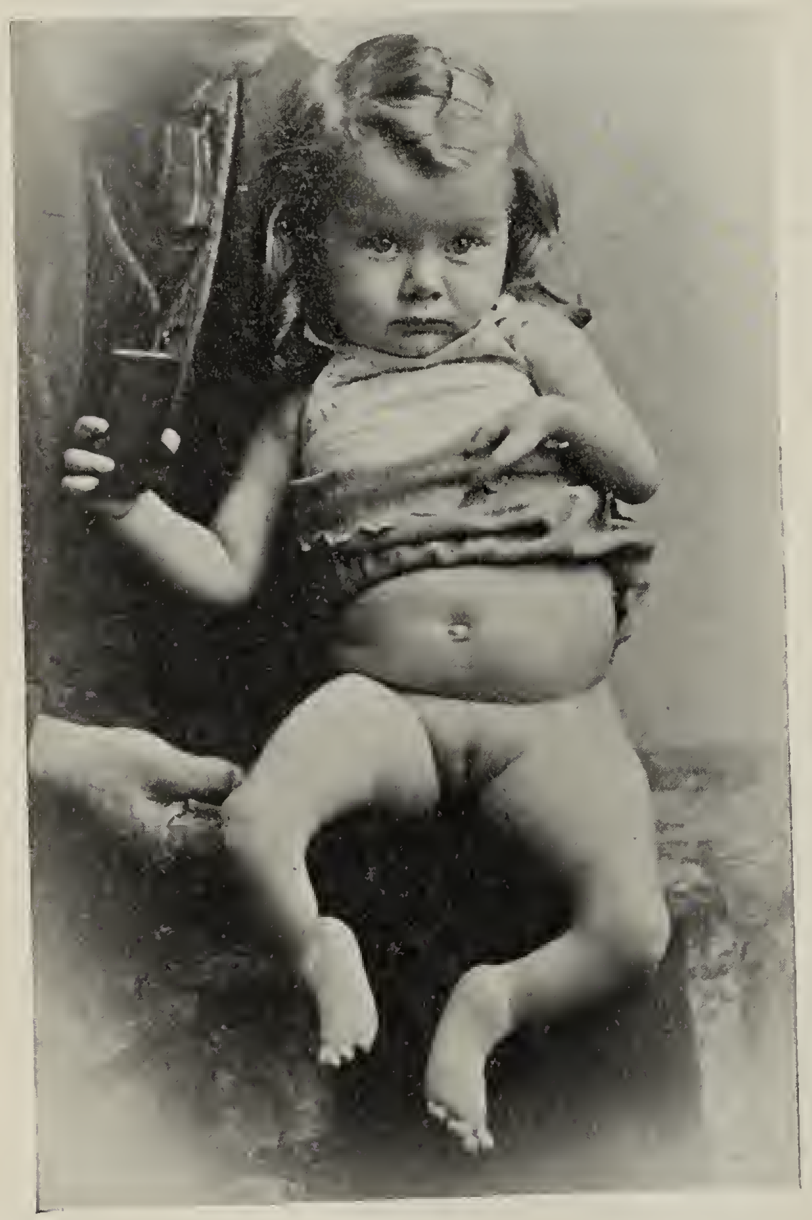


Fig. 3.

Both tibiæ and patellæ are absent. The fibulæ articulate with the femur as in the former case, and permit of considerable motion. The contractured condition which was noticeable in the former case is present here also. There would appear to be no condyles present in the femur, as each is narrower and smaller than normal. Owing to the absence of the tibiæ, the feet are strongly supinated, the plantar surface looking upward and the ends of the fibulæ projecting far downward. There are four toes on the left foot and three on the right. There are no abnormities found other than those named, except that the number of metatarsal bones corresponds with the number of digits. The child seems to be intelligent, affectionate, and well developed. Believing that no surgical procedure can make the limbs below the knees useful, I have advised disarticulation. As the left hand is being used quite well, the child being able to hold a spoon and feed herself with it, I think interference here not indicated. (See Fig. 3.)

Case III.—G. A., a woman, aged forty-five years. Dr. McCallum, Dunnville, Ontario. January 22, 1896. Right arm is properly developed to the elbow. The radius is absent entirely and there is no thumb or index finger. The ulna appears to be normal and there are three fingers which are not normal. The first apparently corresponds to the middle finger and is longer than it should be. There are in each three phalanges. All three of these articulate at about a right angle. They are quite movable and can be used in knitting, sewing, etc. The forearm is very short—six inches in length. No bones of carpus can be distinguished.

The left forearm is absent entirely, but arising from the outer condyle of the end of the humerus are two well-formed fingers, apparently the ring and little finger, over which she has good control, extending, flexing, adducting, and abducting them at will. The feet are well formed except the toes. On one foot the great toe and the second grow together and have only one nail. The body is small and distorted. She has been able to do during her life much work, especially in knitting, sewing, and fancy work. Could not obtain consent to have a photograph taken.

Case IV.—W. H., six months old. Dr. Maclin, Stratford, Ontario. April 24, 1896. Child seems to be well developed and normal in every way except that the radius is absent from the right arm. There is a small rudimentary thumb on the radial side having as a pedicle only a little skin with the accompanying vessels. The thumb is removed by scissors. There are four fingers fairly well developed. It is noticeable that those toward the ulnar border of the hand permit of more complete function than those toward the radial, in flexion and extension, both passive and voluntary. The hand at birth lay under the inferior maxilla, against the neck, where it made a distinct impression, which may still be noticed. I cut subcutaneously the ligaments and all obstructing bands toward the radial aspect of the junction of the arm and hand, and used force to pull the hand down, so as to bring it into line with the ulna. There was but very little hæmorrhage, and the position of the hand was quite completely rectified, except that the ulna still jutted outward toward that border of the hand. The limb was maintained in place by plaster-of-Paris dressings.

May 11th.—Dr. Macklin writes that the child is doing well, and that the dressings have not been removed.

Case V.—L. G., aged twelve years. Dr. McLaughlin, Bowmanville. November 11, 1895. A boy who presents double deformity of the arms (Fig. 4). At birth he had an occipital meningocele. This was several times injected and subsequently the hard tumor amputated. There is only a small, flat elevation, about an inch and a quarter in diameter, not covered by hair. The radius is absent from each arm. There are four fingers, the thumbs and first metacarpal bones being absent. Other carpal bones appear to be normal, and the hand articulates with the radial side of the lower end of the ulna, its axis being at an angle of about eighty degrees with the latter bone. It would, perhaps, be rash to assert that there is no vestige of the radius at the upper end. The ulna is bent so as to be concave at its anterior and inner aspect, and is unusually large at its lower extremity. It juts downward upon the ulnar border of the hand so that it would be impossible to pull the hand downward and have the upper portion of the carpus in contact with the end of the ulna. An artery is found pulsating about the middle of the wrist in front. Do not find any other pulsation. The fingers toward the ulnar border are better developed and have better function than those on the defective aspect of the arm. On the right the finger at the radial border is distorted and useless. At its base it juts out at right angles to the axis of the hand, and it is my purpose to amputate. He can use a pencil between the ring and little finger of either hand, and can write fairly well. The right arm and hand are better developed than the left. The distance from the olecranon process to the end of the ulna in each arm is five inches and a half.

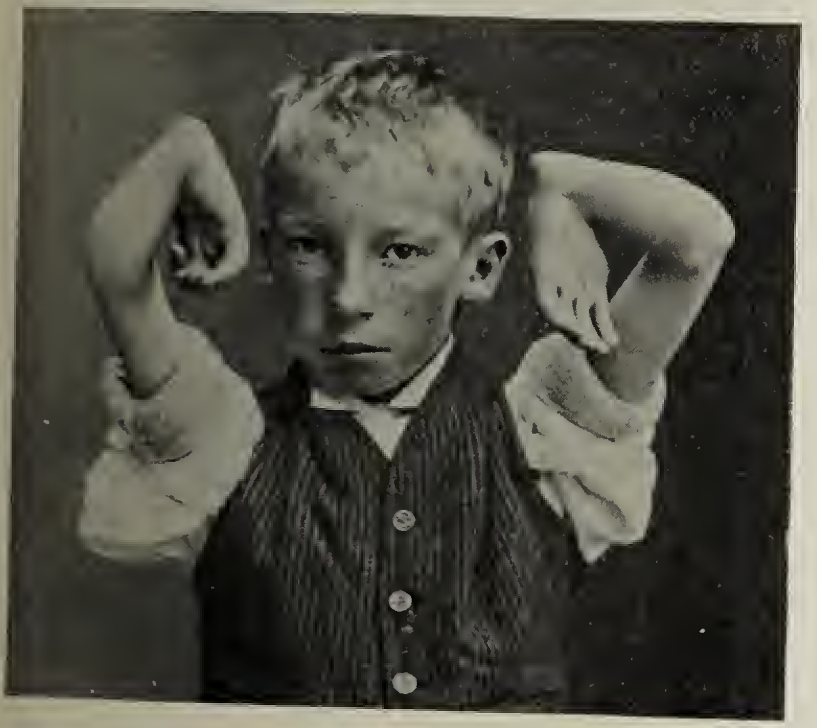


Fig. 4.

December, 1895.—The left hand was operated upon y cutting all resisting structures at the radial border of the arm which prevented bringing the hand down into line with the ulna. The hand was then brought down by grasping it with the hand and pulling forcibly until it was in a line parallel with the axis of the arm. In this position it was retained by fixed dressings.

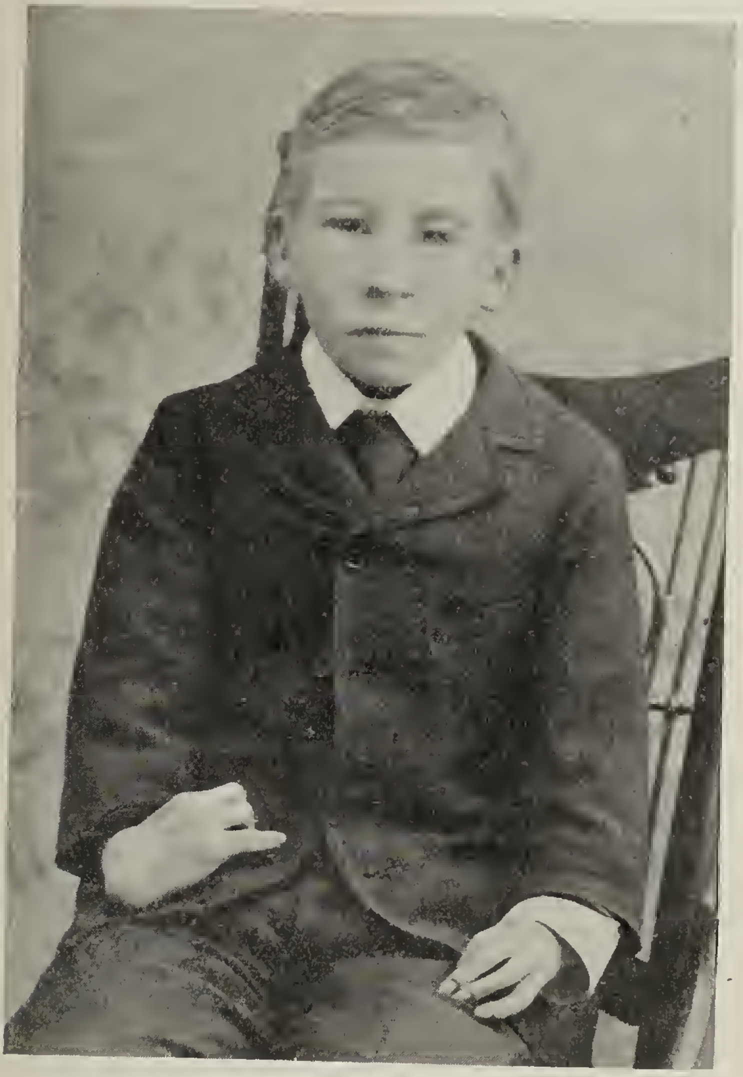


Fig. 5.

Some superficial sloughing occurred on the radial aspect of the hand and over the end of the ulna. After about four weeks the fixed dressings were removed and massage employed. The position of the hand was greatly improved, and the function of the fingers in no way interfered with. At night he wears an appliance which fits upon the ulnar border and can be so applied as to bring the hand as far and forcibly toward the ulnar side as can be borne.

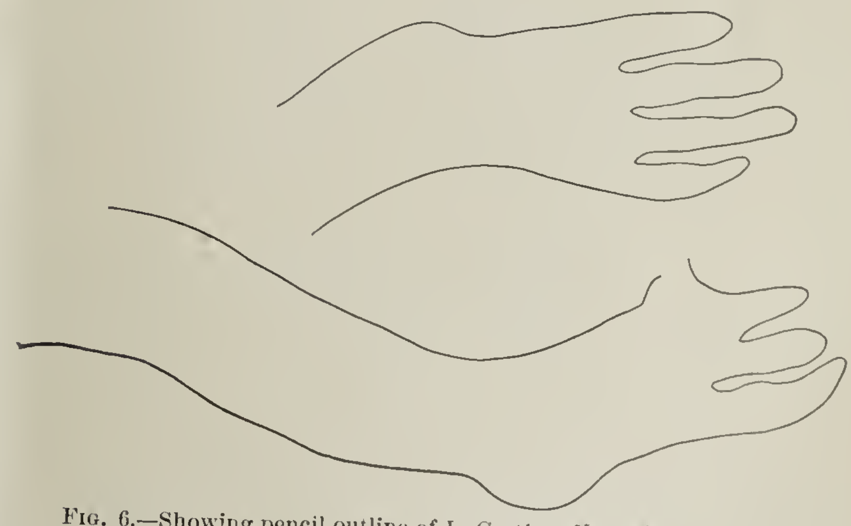


Fig. 6.—Showing pencil outline of L. G., Case V, on April 23, 1896.

April, 1896.—Right hand operated on in a similar manner and with similar result.

23d.—Both hands are doing well. Massage is being employed and function is improving. Have not obtained photographs since last operation. (See Figs. 5 and 6.)

CASE VI.—Baby M., aged six months. Dr. J. E. Eakins, Belleville. November, 1893. Family history good. No difficulty at time of birth. Several other children, who are well developed and healthy. Radius absent from the right arm. The hand at birth was lying almost parallel with the axis of the arm, the fingers directed toward the bend of the elbow. No thumb present, and no other abnormities except that the fingers are stubby and shorter than normal. All the phalanges and metacarpal bones of the two fingers on the ulnar border are normal, but the two radial metacarpal bones and their phalanges seem to be continuous. There are only four metacarpal bones and no vestige or rudiment of a thumb. Can not distinguish whether any bones of the carpus are absent or not.

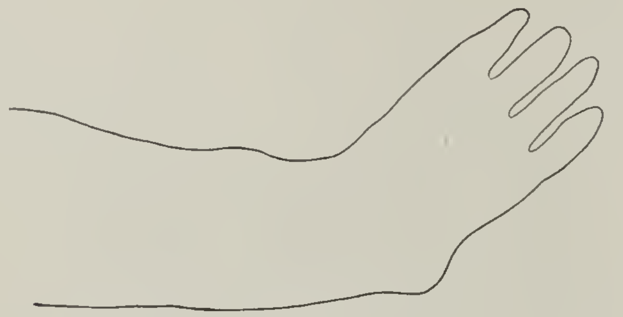


FIG. 7.—Case VI, showing arm and hand tracing when three years old.

Under chloroform a section was removed subperiosteally from the end of the ulna through a longitudinal incision made at the ulnar border. The amount removed was about three fourths of an inch. The hand was then readily brought into line with the axis of the arm and retained by fixed dressings. Healing was without special incident. A simple splint subsequently was worn at night, the child being allowed to use the hand freely in the daytime.

Two years and a half subsequent to the time of operation the arm and hand were in the position shown in the accompanying cut, and the mother reports favorably as to the use of the hand, saying that it seems almost equally strong as its fellow and as useful in carrying objects and for all ordinary purposes.

CASE VII.—F. M., aged twelve years. Dr. E. S. Popham, Winnipeg, Manitoba. The boy has always been quite strong and rugged. The deformity which is found is congenital. There is an absence of the third, fourth, and fifth ribs on the left side, commencing at the sternum and extending outward four inches. The ends of the fourth and fifth are found again in front of the axillary line free like floating ribs. The heart impulse is very marked over this region. The sounds are normal. There is quite a marked prominence at the junction of the third and fourth ribs with the sternum on the right side. The clavicle of the left side is much more prominent than that of the right and at its centre it bulges upward. From midvertebral to midsternal line, at level of the fourth rib, the right side measures thirteen inches and the left eleven inches. He has increasing spinal curvature on the left, most marked at the junction of the dorsal and lumbar vertebræ.

The left hand of this patient shows a lack of development and an absence of some of the phalanges. The fourth and fifth fingers have each two phalanges and they are syndactylous. The third finger has also two phalanges and is very short. The index fingers would seem to have only one phalanx, the thumb two, and very short. (Fig. 8.)

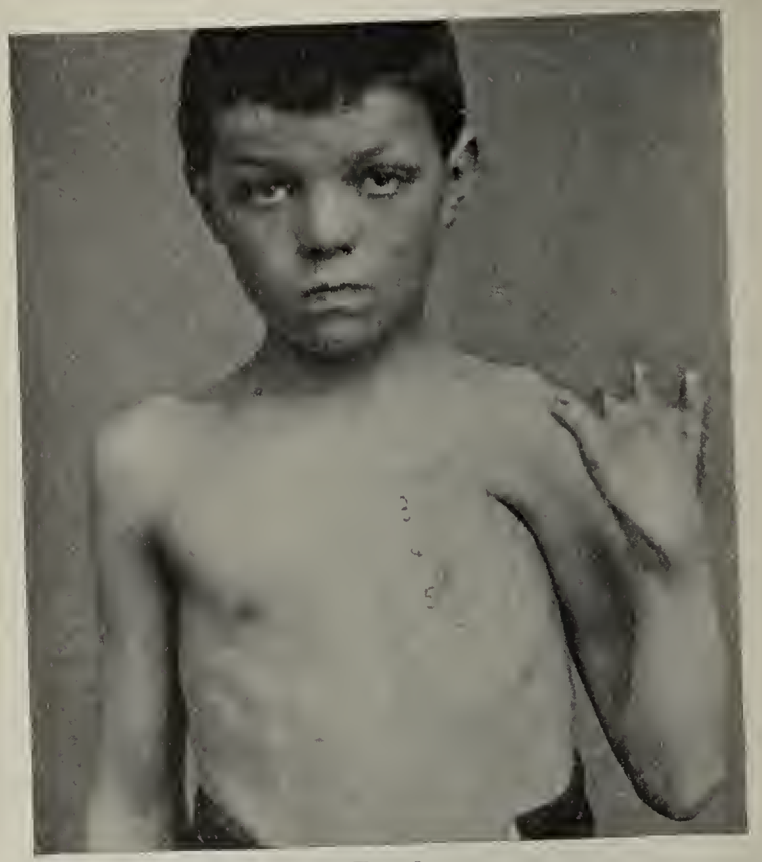


FIG. 8.

CASE VIII.—G. H., aged fourteen months. Dr. Hart, Toronto, May 4, 1896. Left leg is defective. There is a small linear cicatrix in front of the crest of the tibia just a little below the middle. At that point also an angle is felt as if the bone had been broken. Left tibia four inches and a quarter in length. Right tibia five inches and an eighth. So far as can be determined by palpation the fibula is entirely absent. The left foot has only four toes and the corresponding number of metatarsal bones. On the outer side of the femur, a little toward the posterior aspect, about the middle, there is a cicatrix which is quite deep. The shaft of the femur on that side extends up beyond Nélaton's line, so that the practical shortening of the leg is nearly three inches. There is a congenital dislocation of the hip joint. Absence of the fibula permits marked pronation of the foot.

Probably no operative interference would be helpful in remedying the defect of the fibula. It is decided to apply a leg-brace on the left side, and to build the boot in such a manner as to prevent the eversion of the foot, which is consequent upon the absence of the fibula.

CASE IX.—L. M., aged twelve years. June, 1895. Admitted to the Hospital for Sick Children because of hip disease. It is noticed that the left hand is defective, inasmuch as there are only four metacarpal bones and four digits. That which is absent would seem to correspond most fully with the index finger. The other three fingers and thumb appear quite normal, and the defect might easily escape casual observation. There are no other skeletal defects noticeable in the case.

CASE X.—A. J. J., aged two years. Dr. Primrose, Toronto. This is a case of one-sided absence of the tibia in a girl, to which I am permitted to make reference by Dr. Primrose. The case is very similar in its anatomy to that which I have described in Cases I, II and IV. It is hitherto unpublished, but details of it including a very minute anatomical report, will shortly be published in the *Transactions of the Pathological Society of London.* Amputation in this case also was done, and the child walks with a prothetic appliance.

I may just add that I have also seen another case similar to that reported as Case V, in the practice of Dr. Jamieson, of Winnipeg, but that I did not make notes of the case when seen; and also one case of partial absence of ribs similar to Case VII, but that I have lost the notes. By the courtesy of Dr. Primrose I am permitted to show the dissected leg and foot.

There are a few points which are brought out in the history of these cases which are worthy of brief consideration. In six of the individual limbs examined there was a condition of the skin which gave an appearance of the existence of a cicatrix. It has been referred to by others as an umbilication of the part, the cutaneous structures being drawn inward and bound down more or less to the bone. The existence of this condition, in one case especially (Case VIII), immediately in front of the crest of the tibia, at which part is presented a sharp angle, suggests the possibility of a prenatal compound fracture. The query is suggested whether this may be an explanation, in any way, for the defect which is found to exist. A similar condition in the same child was found at the outer aspect of the thigh, in which case, it will be recalled, there was a congenital defect of the hip.

Some years ago I showed a boy at the Toronto Medical Society who had one femur two inches shorter than its fellow. In this case there was a similar congenital cicatricial appearance on the outer aspect of the thigh, the recess reaching down apparently to the immediate proximity of the bone. In other cases here reported a similar condition is found to exist at the outer aspect of the lower end of the femur.

Another condition that was quite constant in the cases where the radius was absent was the much better function in the digits toward the ulnar border of the hand. In all of my cases, where the child is old enough to use them, these fingers are found to be under much better control, showing that the defect toward the radial side is not only a skeletal defect, but that the muscle and nerve supply to those structures present upon the defective side is less complete.

This might be a matter of medico-legal importance, as it might be claimed that operative interference had done injury to the less useful digits.

The question of the method of operation when the radius is absent is one of great importance. In the patients upon whom I have been permitted to operate where this bone is defective I could not, by any permissible amount of operation (at least what seemed to me permissible), bring the hand far enough down to be able to make a correct apposition between the end of the ulna and the bones of the carpus. In Case V, where the radii were absent in a boy of twelve years, the method which I adopted of cutting the obstructing bands, tendons, and ligaments at the concave side of the deformity permitted me to bring the hand into an improved position, such as shown in the accompanying cut and tracings (Fig. 6). There has been no injury to the function of the limbs, and the appearance when the coat sleeve comes down upon the wrist approaches very closely to natural.

In Case VI I removed a piece from the ulna and have obtained a result very similar to that of the former, but growth in length will, no doubt, be interfered with. In my last case of this kind I operated upon a child of six months, and found it easier to bring the hand down nearly into apposition with the end of the ulna by subcutaneous operation similar to that employed in Case IV. It is my purpose in this case at a later time to proceed further and adopt the plan described by Sayre or that described by Bardenheuer, if the result obtained from my recent effort should prove to be unsatisfactory.

In Case II, in which the ulna is absent, the form of the arm, the motion at the joints, and the degree of development and function shown in the thumb and index finger make it impossible for any surgical procedure to improve the efficiency of the arm.

In the cases of absence of the tibia, of which five are here described, three of which have already been operated upon, it seems to me that no orthopædic procedure would be of service. In the two cases which I examined at the time of operation the joint formed between the fibula and femur was very defective. The femur itself was much atrophied. Condyles were absent. The relation of the lower end of the fibula to the foot would preclude the possibility of obtaining a joint which could ever become serviceable for bearing the weight of the body.

In all the cases the lower end of the fibula is applied externally to the astragalus, the foot being so supinated that it rolls over upon the outer border and dorsum, the upper, inner, and posterior aspects of the astragalus coming into contact with the fibula. There is no doubt that the position of the foot in its relation to the fibula could easily be rectified, but if the normal relation between these bones be secured and maintained there would be no column of bone extending directly between the femur and the astragalus, even if the head of the fibula were implanted into the end of the femur. In the cases where I have amputated, and so far as I may judge in the other cases that I have examined, the bone also is too slender and defective to give any efficient support, even if it could be brought in as a supporting column between the femur and the foot. All things considered, if one is to judge from the five cases of this kind here reported, I think it must be placed beyond controversy that the most efficient support to be secured for the patient is found in the artificial limb, which may be applied to a good stump.

In the case of defect of the fibula here reported, the malposition of the foot and defect of the limb, although very considerable, are such as I hope to be able to overcome by orthopædic measures.

In none of the cases was there a difficult labor, and in none was any accident known to have occurred during the period of gestation. Stories are told by the mother, in some of the cases, about a fright or surprise or shock which occurred during pregnancy, and which is supposed to have been a determining cause in producing the defect.

In operating again in cases where the radius is absent I would try to follow the plan recommended and adopted by Bardenheuer of splitting the end of the ulna, allowing the carpus to be wedged in between the fragments.

The dissections and report of the same were kindly made by Dr. F. N. G. Starr.

DISSECTION OF LEG AND FOOT IN WHICH THERE WAS CONGENITAL ABSENCE OF THE TIBIA.

Left Side.—The tibialis anticus arises from the upper third of the shaft of the fibula on its inner and anterior aspect. On the inner and back part of the belly of the muscle a union between it and the flexor longus digitorum takes place. It is inserted in the usual place after passing through the annular ligament.

In front of and to the outer side of the tibialis anticus and between it and the extensor longus digitorum there lies the fleshy belly of the extensor proprius hallucis, which arises from the upper half of the anterior aspect of the shaft of the fibula and from a well-developed membrane corresponding to the interosseous membrane. This passes through a separate compartment of the annular ligament, when it divides into two tendons, one of which passes along the inner aspect of the dorsum of the foot, where it is joined by a slip from the inner belly of the extensor brevis digitorum, and when it reaches the metacarpo-phalangeal articulation of the great toe it spreads out and sends some fibres of attachment to the base of the first phalanx, then continues as a tendinous band to be inserted into the base of the terminal phalanx of the great toe; the other tendon passes along the inner aspect of the foot until it reaches the great toe and is finally inserted into the inner aspect of the terminal phalanx by two tendinous bands, one of which goes to the dorsal and the other to the plantar margin of the phalanx.

This last insertion seems to have taken the place of the flexor longus hallucis, for that muscle is not present. The effect of contraction of the muscle would therefore be practically nil.

The extensor longus digitorum arises from the upper two thirds of the anterior aspect of the shaft of the fibula, just external to the extensor proprius hallucis, becomes tendinous and passes through a compartment in the annular ligament along with the peroneus tertius. It then divides into three tendons, the innermost of which divides again into two, and these are inserted in the normal manner.

The peroneus tertius arises from the lower third of the anterior aspect of the shaft of the fibula, but not from the pseudo-interosseous membrane, and passing under the annular ligament it spreads out into a broad, flat band which is inserted into the inner aspect of the dorsum of the metacarpal bone of the little toe throughout its whole length, with the exception of the distal epiphysis.

The solæus comes from the back part of the head of the fibula and from the posterior external and internal surfaces of the shaft in its upper third; passing down, it blends with the gastrocnemius to form the tendo Achillis, which is inserted into the posterior and inner aspect of the tuberosity of the os calcis. The tendon of the plantaris is inserted internal to it.

The flexor longus digitorum comes from the posterior and inner border of the shaft of the fibula and from the pseudo-interosseous membrane; at the bend of the ankle it divides into two tendons, one of which goes to the insertion of the flexor longus hallucis and the other, after being joined by the flexor accessorius, passes to the normal insertion.

A muscle arises from the back part of the pseudo-interosseous membrane and from the postero-internal surface of the shaft of the bone in its upper two thirds, and goes to be inserted into the internal cuneiform bone, probably taking the place of the tibialis posticus.

A large muscular belly, half an inch wide, arises from the posterior and internal surface of the shaft, in its middle two fourths, and from the pseudo-interosseous membrane, blending with the preceding muscle. It finally become tendinous and is inserted by a broad band into the outer side of the under surface of the os calcis and into the calcaneo-astragaloid ligament.

Another very small muscular band arises from the upper third of the posterior and inner border of the shaft and is inserted into the outer side of the under surface of the os calcis close to its anterior end.

The peronei muscles arise, the one from the upper two thirds of the outer surface of the shaft of the fibula, and from the deep fascia and intermuscular sæptum, and passes down as a long tendon behind the external malleolus to be inserted into the base of the metatarsal bone of the little toe on its outer surface, thus having the origin of the peroneus longus and the insertion of the brevis.

The other comes from the lower third of the external surface of the shaft, in front of and to the inner side of the former, passes down behind the external malleolus, receiving a slip therefrom, until it reaches the sole of the foot, which it crosses and passes to the insertion of the peroneus longus, into the base of the metatarsal bone of the great toe.

The anterior tibial vessels and nerve are very small; they pass down on the anterior aspect of the pseudo-interosseous membrane, between the tibialis anticus and the external proprius hallucis. When opposite the ankle joint they pass beneath the tendon of the extensor proprius and come to lie external to it. Just here the artery gives off the external malleolar branch. Becoming the dorsalis pedis, the distribution is then about as usual. The nerve became so minute and was so brittle that it could not be traced further.

The posterior tibial vessels and nerve lie to the posterior and inner aspect of the leg, between the solæus behind and the tibialis anticus in front, and rest upon the inner border of the tibialis posticus. The artery lies in front of and to the outer side of the nerve above, crosses in front of and lies behind it at the bend of the ankle.

The nerve, which is large, divides into internal and external plantar. The internal, upon reaching the middle of the sole, divides into three branches; the innermost of these subdivides, one going to the inner side of the great toe, the other to the adjacent side of the great and second toes; the middle one goes to the adjacent sides of the second and third toes; the outermost subdivides—one branch going to the adjacent sides of the third and fourth toes, the other to the fourth and fifth.

The external plantar sends a branch of communication to the twig from the internal that goes to the fourth and fifth toes. It supplies the deep muscles of the sole with its deep branch, while its superficial branch goes to the outer side of the little toe.

The artery is normal in its distribution.

The nutrient artery enters the fibula about the middle of its inner surface.

The Foot.—The annular ligaments were well developed.

The plantar fascia was well developed, and the central and two lateral portions could readily be made out.

The flexor brevis digitorum arises from the inner tubercle of the os calcis, from the plantar fascia, and from the intermuscular sæptum; it divides into four tendons which split opposite the metacarpo-phalangeal articulation to allow the passage of the deep flexor of the toes. Without further union these bifurcated tendons are inserted into the second phalanges of the four outer toes.

A muscle arises by a tendinous slip from the inner aspect of the os calcis posterior to the groove through which the tendon of the flexor longus pollicis runs, and corresponds in its insertion with the abductor pollicis by being inserted into the base of the first phalanx of the great toe.

The abductor minimi digiti is normal throughout.

The accessorius is normal, arising from two heads, the inner of which is larger.

The lumbricales are normal, with the exception of the second, which is hardly perceptible, appearing only as a few muscular fibres.

The flexor brevis hallucis, though very small, has the usual origin and insertion.

The adductor hallucis arises from the tarsal extremities of the third and fourth metatarsal bones, and from the tendon of the muscle that has the origin of the peroneus longus and the insertion of the brevis. It has the usual insertion with the flexor brevis into the outer side of the base of the first phalanx of the great toe.

The transversus pedis has the usual origin and insertion, but is very minute, being not wider than two lines t its widest part.

The flexor brevis minimi digiti is normal throughut.

There were, as usual, three plantar interossei musles and four dorsal.

The extensor brevis digitorum arises from the outer ide of the os calcis, external to the groove for the eroneus tertius (with this exception the origin is nornal). It then crosses obliquely over the dorsum of he foot, the innermost tendon being inserted, as aleady described, by blending with a part of the extenor proprius hallucis. The remainder of the tendinous nsertion is normal, with the exception of that one oing to the third toe, which receives a small muscular elly opposite the middle of the third metatarsal bone, nd which has arisen from the dorsal aspect of the ird metatarsal, near its upper extremity.

The accompanying figure and photograph will best emonstrate the relation of the bones.

In the figure (notice 9), at the lower extremity of the fibula, on the inner aspect, and in contact with the inner and upper margin of the astragalus there is a small projection of cartilage, which would appear to be a rudimentary tibia, for from it springs a membrane corresponding closely with the interosseous membrane, and which I have taken the liberty of calling the "pseudo"-interosseous membrane.

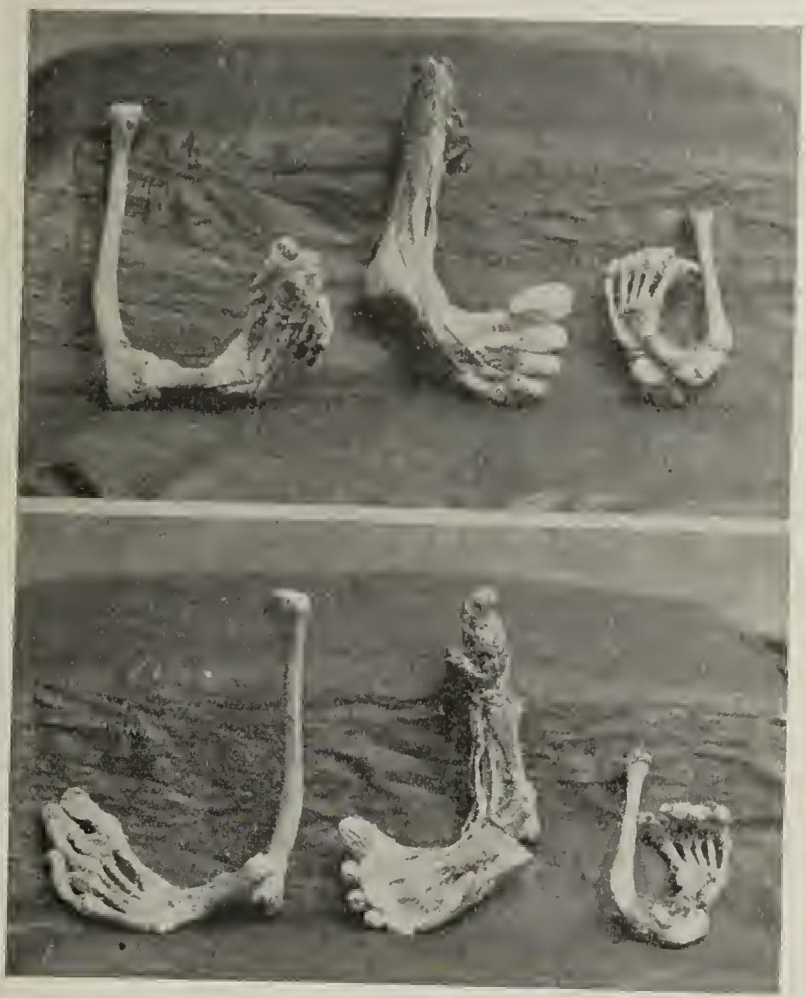


Fig. 9.

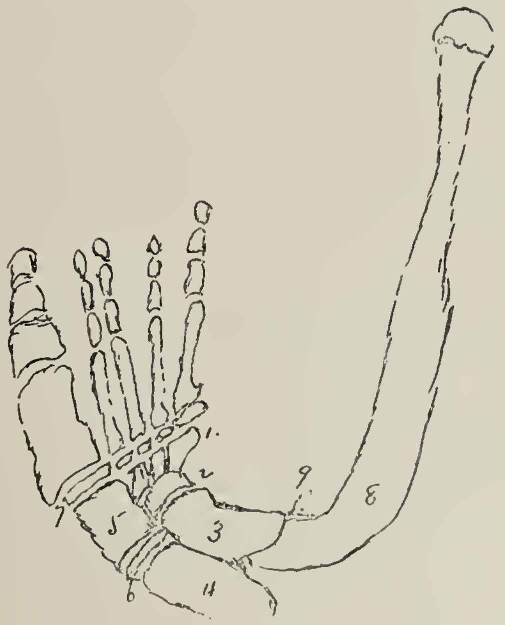


Fig. 10.—1. Cuneiform bones. 2. Scaphoid. 3. Astragalus. 4. Os calcis. 5. Cuboid. 6. Intra-articular cartilage. 7. Epiphyses. 8. Fibula. 9. Rudimentary tibia from which arises the interosseous membrane, called in the dissection "pseudo"-interosseous.

The os calcis articulates with the astragalus and with the cuboid. It is oblong in appearance. The tubercles are fairly well marked, but the sustentaculum tali is hardly distinguishable.

The astragalus articulates with the os calcis, the fibula, and the scaphoid. The articular facet for the fibula, instead of being on the outer surface, is on the posterior aspect of the bone. There is no appearance of the large trochlear surface for the tibial articulation.

The cuboid articulates with the os calcis, the scaphoid, the external cuneiform, and the fourth and fifth metatarsal. This approaches more nearly to the shape of the normal bone.

The scaphoid articulates with the astragalus, cuboid, and the three cuneiform bones, and is practically normal in shape.

The cuneiform bones, together with the metatarsal and phalanges, are practically normal.

Right Side.—In making my dissection of the right foot and leg I have avoided cutting the muscles away; hence the dissection has not been as complete as I would like, but it makes a valuable specimen for preservation.

The origin of the tibialis anticus is practically the same as on the left side. The insertion, however, differs, in that it is double, the one being normal; the other follows an abnormity in the extensor proprius hallucis to the base of the metatarsal bone of the great toe, then crosses the sole of the foot, and, joining the flexor accessorius, terminates by being inserted into the terminal phalanges of the four outer toes, thus taking the place of the flexor longus digitorum, which is absent.

The extensor proprius hallucis has a normal origin, but at the bend of the ankle it splits into three tendons, one of which goes to the upper or dorsal surface, one to the inner side, and one to the plantar surface of the terminal phalanx of the great toe. This last one takes the place of the flexor longus hallucis, which is absent.

The extensor longus digitorum is practically the same as upon the left side.

The peroneus tertius is also the same.

The peroneus longus has the usual origin, but as it passes behind the external malleolus it sends to it a tendinous expansion; the remainder goes to be inserted by several tendinous slips into the head of the metatarsal bone of the little toe.

The peroneus brevis is inserted into the dorsum of the last phalanx of the little toe along with the outermost tendon of the extensor longus digitorum.

The tibialis posticus is very large and is out of all proportion in size to the other muscles, but has a normal insertion, and its origin is the same as on the left side.

The tendo Achillis is formed as on the left side.

There is no plantaris muscle.

The flexor brevis digitorum is inserted by three tendons into the sides of the second phalanges of the second, third, and fourth toes.

The posterior tibial artery is in contact with, but on a plane anterior to, the nerve as far as the bend of the ankle. Then it crosses the nerve and divides into the external and internal plantar in such a way that the external plantar (the larger) lies external to the external plantar nerve.

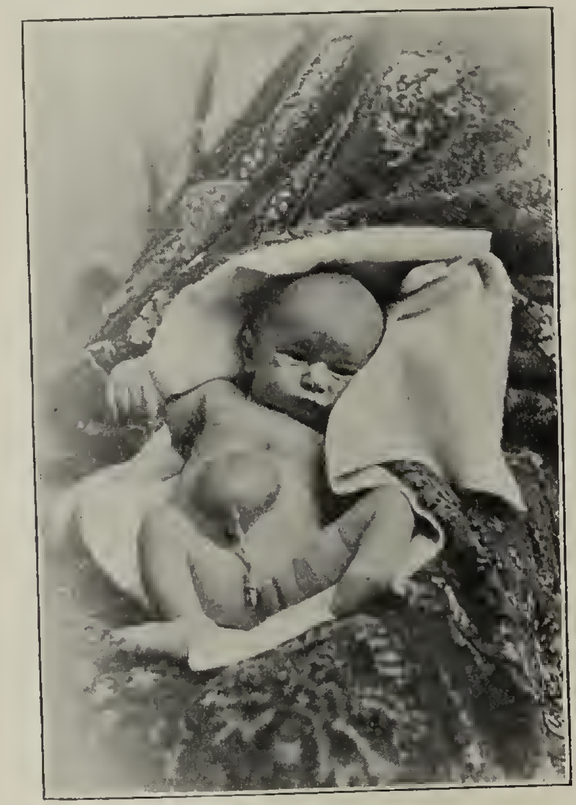
In Fig. 8 is shown what is probably a rudiment or vestige of a tibia.

The Society of the Alumni of the City (Charity) Hospital.—At the sixty-second stated meeting, on Wednesday evening, the 10th inst., the programme included the following: Reports on Cases of Ophthalmia Neonatorum, by Dr. A. E. Adams, of Newburgh, N. Y.; a paper on Pulmonary Tuberculosis and the Board of Health, by Dr. W. L. Bauer; the presentation of specimens, cases, and new instruments; and an exhibition of a cheap convenient, and commodious sterilizer, by Dr. C. S. Cole.

A CASE OF
CONGENITAL UMBILICAL HERNIA.

By ANDREW J. McCOSH, M.D.

Baby McC., male. Born at term. Parents well formed and healthy, as are their three older children. On birth a tumor the size of a large orange was noticed at the navel. Bowels had moved and there had been no vomiting. Admitted into the Presbyterian Hospital September 19, 1896, when thirty-six hours old. A well-developed baby. At the umbilicus, a roundish tumor; diameter, three inches and a half, height above abdominal wall, two inches and a half; color of surface, dark purplish; covered not by skin, but only by the membranes of the cord, through which could be indistinctly seen the liver and intestines moving up and down on inspiration and expiration. Tumor partly reducible. Manipulation of tumor caused apparently no discomfort. Temperature, 100°; pulse, 130; respiration, 34. Treatment consisted in covering the hernia with rubber tissue wet with salt solution.



September 21st.—Baby apparently comfortable, taking plenty of nourishment. Bowels had moved. Temperature, 101°. Operation advised.

23d.—Temperature, 102° to 103°. No vomiting, but somewhat restless, and child looked ill. Covering of the hernia had assumed a dull brownish appearance, and there was some odor.

24th.—Operation. No anæsthetic. Surface of hernia covered by a foul sloughing membrane without vitality, except near its attachment to the abdominal wall This membrane was pulled off with forceps, which exposed to view the liver and transverse colon. The remainder of the membrane (covering of the hernia) wa cut away by an incision carried around the base of th tumor, the liver and intestines being held back wit hot gauze pads. That portion of the liver which wa contained in the sac was covered by a tenacious, partially sloughing exudate, which was scraped off with considerable difficulty, and as a result there was some superficial laceration of its surface and some bleeding, whic was controlled by pressure. When expulsive effor were made by the baby probably about one third of its liver protruded through the gap in the abdominal wall. A few whiffs of chloroform were now given so that the protruding viscera could be more easily returned. The incision around the base of the hernia had exposed the recti muscles, the edges of which, with the fasciæ and skin, were united by interrupted sutures of silk. Approximation of the edges of the wound was somewhat difficult on account of the tension. A strip of rubber tissue was inserted into the peritoneal cavity for drainage.

There had been apparently no pain during the operation, which was followed by moderate shock only.

25th.—Seems comfortable, takes nourishment. No vomiting.

26th.—Pulse failing. Cyanosis. Death.

THE PROPOSED CITY HOSPITAL FOR CONSUMPTIVES.

By W. FREUDENTHAL, M. D.,
PRESIDENT OF THE GERMAN MEDICAL SOCIETY OF THE CITY OF NEW YORK.

Unquestionably every practitioner is interested in the plan, recently proposed by our local board of health, for the erection of a hospital somewhere in the city's utskirts for the segregation and treatment of persons uffering from tuberculosis. This plan, on the whole, will robably meet with the approbation of most physicians. Personally I indorse the scheme, but regarding the operaion of the plan and the execution of the original purpose ny views of the matter differ very materially from those utlined in the first announcement of the health board, nd on that account I take the liberty of giving expresion to my views in this manner.

First, as I understand it, the board of health wishes o assume entire control of such a hospital. This, I beeve, is entirely in conflict with the object for which uch a board is organized. The New York board of ealth was organized for the purpose of preventing disase, and not for the purpose of treating disease. This tter function belongs to those physicians only whose ves are devoted to the purpose; to clinicians, not to bacriologists and pathologists.

Secondly, I do not believe, as the board of health thorities do, that such a hospital would be the means stamping tuberculosis out of existence. The statistics, hich I have collected and now cite, speak against any ch claim; for, according to the official announcement the board of health (*New York Medical Journal*, Janry 23, 1897, p. 131), there have been treated during the st year, under the charge of the Department of Charis alone, three thousand cases of tuberculosis. Now, in ler to care for the tuberculous patients of this departnt alone we would require a hospital, to say the least, it would accommodate two thousand patients. What uld become of the other tuberculous patients? What vision is there for the six thousand tuberculous pants who die yearly of this disease in New York city? So far as I am able to comprehend the plan recently advocated, I see nothing in it to provide shelter or treatment for this latter number. It surely can not be believed that the board contemplates the erection of one hospital of a few hundred beds for the accommodation of the thousands of victims of tuberculosis who reside in town!

"Cleanliness, disinfection, and isolation" are not the means of *preventing* tuberculosis. In an article published in the Festschrift für Professor B. Fränkel (*Arch. für Laryngol.*, Bd. v, 1896), referring to the ætiology of tuberculosis, I said: "Tuberculosis in the 'yellow' race has been studied thoroughly by Dr. Ernest Martin, physician to the French Legation in China. According to him, tuberculosis did not prevail to any extent and was not endemic in China until recently. While it is true that in many cities the population is a large one, still in none are there to be found such overcrowded districts as in some parts of Paris. Prolonged imprisonment does not exist in China, so that, according to Martin, the alleged principal causes of tuberculosis—viz., dirt and uncleanliness, of which you find a great deal in China—are of slight importance in the production of the disease."

Apropos: Is a tuberculous mother, who kisses and hugs her children, less dangerous to her family when she lives amid luxurious surroundings than one who dwells in a tenement house? I do not for a moment undervalue the importance of good hygienic surroundings, but the possibility of infection is in both cases almost the same.

And now let me allude to the most important factor in the eradication of tuberculosis—namely, isolation. Does any one really believe that such a thing is possible? I doubt it for various reasons, the one being that we can not in all instances establish the disease despite our bacteriological resources, and it is just in these doubtful cases that the danger of infection might be great.

There is also another practical point in relation to the construction of hospitals and sanitaria under municipal auspices, and that is this: Is the city in a condition, or will it ever be, to provide institutions large enough and sufficiently numerous to care for all the consumptives who reside within its limits? Now, be it granted that the city can provide for all its consumptives, I then deny that this measure will tend to stamp out tuberculosis. Such an experiment has been tried without any successful issue resulting. It is so interesting in connection with the subject under consideration that I can not refrain from citing it.

It was just a hundred years before the discovery of the tubercle bacillus that a law was passed in Naples, on the recommendation of the highest medical authorities, regarding the isolation of tuberculous patients. This law was enforced from the 17th of July, 1782. The following were some of the provisions of that sanitary law:

1. Every physician was obliged to report all cases of pulmonary phthisis directly he was enabled to establish its diagnosis. Failure to comply with this requirement of the law was punished by a fine of three hundred ducats! For a second similar offense an irrevocable exile of ten years was prescribed.

2. Poor patients were transferred to a hospital as soon as diagnosis was established.

5. All furniture in use in rooms occupied by phthisical patients was to be burned, or rendered innocuous by other means.

6. The local magistrates were empowered to cause all rooms occupied by such patients to be renovated by kalsomining, painting, and papering the walls and ceilings. They were further empowered to replace all woodwork of the room, such as floors and windows, with new material.

8. A penalty was inflicted upon those who bought or offered for sale any article of furniture that had had a place in a room previously occupied by a phthisical patient.

Regarding this unusually severe law Uffelmann (*Berl. klin. Woch.*, p. 369, 1883) says that he believed tuberculous patients were placed in the same category as those suffering from the pest. Having once appeared in a family, tuberculosis, according to the edict of the law of Naples, was one of the severest afflictions and hardships that could have occurred to a family. Such a family was refused a residence by all house and land owners. Driven from place to place, the head of the family soon saw his business and occupation disappear, only to be replaced by poverty and misery. Houses in which phthisis had developed were shunned. There was no restitution and no indemnity by the authorities. Indescribable hardships, says de Renzi (*Storia della medicina in Italia*, v, p. 512; see also Uffelmann), followed the operation of this obnoxious law. Regardless of public sentiment and in opposition raised by some members of the medical profession of Naples, the government put the law into practice with a severity and strictness that was almost unknown previously.

But with what result? Absolutely nothing was effected through these inhuman measures. At the expiration of fifty-six years, during all of which time the law was in operation, there was no diminution in the number of tuberculous patients, the disease prevailing with the same severity and fatality.

I hope these lines may convince the reader of what we may expect if such a hospital is built. Such a hospital would be in great demand by those suffering from tuberculosis, and they would voluntarily fill the wards for the sake of obtaining shelter and treatment. The poor require no law to force them to seek admission to such a hospital; they will only be too glad to enter voluntarily. Coercion with them is uncalled for.

Such a hospital could never be the means, directly or indirectly, of causing tuberculosis to disappear from our nosology. The root of the evil lies deeper than isolation or segregation.

943 Madison Avenue.

A CONFIRMATORY REPORT ON WIDAL'S SERUM DIAGNOSIS OF TYPHOID FEVER.*

By JULIUS ULLMAN, M.D.,
and ALBERT E. WOEHNERT, M.D.,
BUFFALO, N. Y.

In reviewing evidences of medical progress we are reminded of the combined efforts of clinicians to discover or devise means by which disease processes are to be distinguished from others with allied symptoms.

Limiting ourselves to the subject of typhoid fever, the adjective typhoidal, meaning cloudy, is paramount proof that there are many diseased conditions which may so simulate the picture of typhoid fever as to justify the application of the term typhoidal. These diseases are pneumonia, severe malarial fever, cerebro-spinal meningitis, acute miliary tuberculosis, appendicitis and perityphlitis, etc.

Let us survey the clinical means by which differential diagnosis is and has been attempted up to the present application of Widal's serum diagnosis.

I. Ehrlich published a reaction, called the diazo reaction, and alleged it to be diagnostic for typhoid fever, but it has been found that this reaction can be obtained in other diseases—namely, erysipelas, pneumonia, scarlatina, miliary tuberculosis, and actinomycosis of the lung, etc.—so that for differential diagnosis in doubtful cases but little reliance should be given it.

II. The examination of the blood offers, in many instances, a ready means by which pathological processes can be clinically separated.

In typhoid fever there is found to exist a decrease in the number of red corpuscles (oligocythæmia) and in the percentage of hæmoglobin (oligochromæmia). There has also been noted by numerous observers—Thayer, Strümpell, and others—that there is a decreas in the number of multinuclear leucocytes. Instead o finding a leucocytosis, such as accompanies other inflammatory processes, we find here a uniform decrease o the multinuclear leucocytes, called leucopenia or hypoleucocytosis.

This observation serves very well in cases of typhoi fever where there is no complication, but given a cas upon which is superimposed a central pneumonia or pleuritis, the blood picture will become atypical, an no dependence can be given the blood examination.

III. The bacteriological examination of the fæc for the typhoid bacilli is a positive proof that a give or suspected case is one of typhoid fever, provided the typhoid bacilli are present; but here again we are perplexed by the difficulty of separating the typhoid bacilli from the *Bacillus coli communis*, always present in the dejecta, because of the similarity of the two bacteria morphologically and their behavior in culture media, so that this means of diagnosis, though positive, is impracticable.

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* Read before the Buffalo Academy of Medicine, Section in Me cine, December 8, 1896.

Have we a test or reaction whereby typhoid fever can positively be diagnosticated?

The Eberth bacillus of typhoid fever is a short, plump bacterium with rounded ends. It has a very active motion, which is produced by eight or ten flagella arranged not only at the poles but also at the sides.

Widal (*Soc. des hôp.*, June 26, 1896) described a simple method of diagnosticating typhoid fever, based upon the reaction of typhoid bacilli to the serum of typhoid patients. If to this serum bouillon culture of typhoid bacilli is added, microscopically after a few hours the bacteria will be found to have lost their motility, and appear in clumps and agglutinated. Control tests have shown that this reaction can be employed with certainty to diagnosticate typhoid fever.

Dieulafoy (*Acad. de méd.*, July 7, 1896) made a number of examinations, and fully agrees with Widal's original observations.

Widal further examined seventeen cases and always found the test negative in cases which were not typhoid fever.

Achard (*Soc. des hôp.*, July 24, 1896) was enabled to testify to the value of Widal's test in six cases.

Catrin (*Soc. des hôp.*, October 16, 1896) made experiments on one hundred and twelve cases, comprising fifty-seven patients, of whom thirty-six doubtful cases were diagnosticated as typhoid fever by the Widal serum test.

According to this observer, the reaction manifests itself on the fourth day of typhoid, and in one case it persisted forty-one days after the onset of the affection.

In America, Johnston, Green, and Dysart have made favorable reports based upon the examination of series of cases.

At the last meeting of the American Public Health Association Dr. Wyatt Johnston, of Montreal, read a most interesting paper On the Application of the Serum Diagnosis of Typhoid Fever to the Requirements of Public Health Laboratories. Following this paper we decided to make experimental tests on a series of cases, nd are enabled to give the results of a considerable umber of examinations.

Johnston found, as did also Widal (*Bullet. méd.*, 896, p. 26), that the test responded to a dried serum; ut to Johnston is due the credit of emphasizing this point, because of its practical importance for hospital nd municipal laboratory work. Johnston finds that lood allowed to dry on ordinary writing paper can be tilized for the reaction. This is important, because physicians residing in the city or at a distance can easily transmit the suspected specimen by mail.

Johnston's method of examination has been employed by us in our work, and we will give it *verbatim* as described by him in the *New York Medical Journal*, October 31, 1896:

"Use a dry lens about one fourth focal distance. The dried blood is partly dissolved in germ-free water, and a drop of the solution obtained is placed on the cover glass, which has been passed through a flame and mixed with a drop of typhoid bouillon. This is placed over a hollow cell and sealed by vaseline. I [Wyatt Johnston] control the examination by comparing it with a blood drop from an undoubtedly typhoid case and also with normal blood."

We would caution not to use a bouillon culture older than twenty-four hours, and not have the platinum wire or cover glass heated when in contact with the bouillon culture, as this is sufficient to check the motility of the bacilli.

We have examined twenty-eight cases. Of these, nineteen proved to be typhoid fever and nine were cases other than typhoid.

Through the courtesy of Dr. De Lancy Rochester, we examined cases at the Erie County Hospital as follows:

Mr. G. J. Typhoid reaction present. In hospital eight days with typical temperature, roseola, and diarrhœa. Disease commenced with epistaxis.

Mr. H. Typhoid reaction present. In hospital four days. High temperature, headache, cough, epistaxis, and roseola. In this case besides the roseola there were also an abundance of secondary syphilides present, so that the reaction was important for differential diagnosis. We have seen a similar picture in a pachymeningitis of specific origin.

Miss H. Typhoid reaction present. Patient had a typical course of typhoid fever, and at time of blood examination was twelve days convalescent.

Miss Kate G. Typhoid reaction present. Patient had enlarged spleen, diarrhœa, roseola, and other symptoms of the disease, and is twenty-eight days convalescent.

Jerry C., aged eighteen years, tramp. Typhoid reaction present. Entered hospital last July with the following symptoms: Epistaxis, pyrexia, diarrhœa, furred tongue, enlarged spleen. Has had two relapses, and is at time of examination convalescent twenty-one days. The source of infection in this case was the drinking of well water at the Tifft farm.

Mr. ——. Typhoid reaction present. This was from a case occurring in the practice of Dr. Hartwig, and the course of the disease has been one of typhoid fever.

We also examined a series of cases from the Buffalo General Hospital.

Mr. Alfred S. Typhoid reaction present. Patient, aged twenty-three years and English. Sick three weeks prior to entrance to hospital. Headache; coated and tremulous tongue; temperature, 100°; spleen palpable; roseola.

At the time of the blood examination he had been convalescent fourteen days.

Benjamin C., aged seventeen years, Russian. Typhoid reaction negative. Blood was examined twenty-first day of illness. On entrance to the hospital patient had the following symptoms: Cough, pain in the chest, diminished breathing over bases of both lungs; temperature, 101° F.; headache, diarrhœa, slight iliac tenderness, spleen normal, and no roseola.

Patient is still in hospital, and case is not one of typhoid fever.

Charles G., aged twenty-four years, United States. Typhoid reaction present and *prompt*. Patient had a severe typhoid with bloody stools. He developed two large typhoid ulcers, one over entire sacral region, the other over the right heel. At present examination is convalescent eight days. It is to be noted in this case that the reaction was very prompt and that the case was a severe one. We therefore suggest that there is a relation existing between the intensity of the reaction and the severity of the case and its prognosis.

Dr. Catrin (*Soc. des hôp.*, October 16, 1896) has made a similar observation when he says that "an intense and early reaction appears to imply an unfavorable prognosis."

Mr. S. McN., aged twenty-eight years, United States. Typhoid reaction present. On entrance to hospital had headache, coated tongue, roseola; temperature, 102° F.; pulse, 95; no abdominal tenderness or enlarged spleen.

Mr. B. J., aged twenty-three years, United States. Typhoid reaction present. Illness began with headache, backache, malaise, epistaxis, diarrhœa, iliac tenderness, tongue coated and tremulous.

Patient comes to hospital an ambulatory case suffering a relapse. Was in bed four weeks prior to entrance, and then started to work.

Mr. Michael D., aged twenty-five years, Ireland. Typhoid reaction present. Chills, headache, backache, diarrhœa. Temperature, 103.8°; pulse, 114; respiration, 24. Tongue tremulous, with a whitish coat; 15-20 roseolæ; no splenic enlargement. Ehrlich's diazo reaction present. Deficient expansion and râles heard over the base of right lung.

In this case we examined the blood, and after an hour's observation it did not respond to the test. We decided to make a second examination, because of the many typhoidal symptoms, observing for a longer period. On the second examination, after two hours' observation, motion on the part of the typhoid bacilli had entirely disappeared and they were found in clumps and agglutinated.

Mr. E. S. Typhoid reaction present. Typical course of the fever. Diazo reaction also present.

Miss L. F., aged twenty-one years. Typhoid reaction present. Patient came to hospital in a typhoidal state. There was present a secondary syphilitic eruption; she was therefore placed on the iodide-of-potassium treatment, and at the end of three weeks was convalescent. The blood was examined on the day of her discharge, and the reaction being present, we can say that her typhoidal state was produced by the typhoid fever and not the syphilis.

Mrs. S., aged thirty-six years, Canada. Typhoid reaction negative. Patient entered hospital in a typhoidal state, but convalesced quickly. Her condition was due to self-intoxication (not typhoidal), because of a temporary constipation.

Mr. E. H., aged thirty-three years, United States. Typhoid reaction negative. Last January had influenza, since which time has complained of cough and pain in left side. Physical signs show a hydropneumothorax. A pyopneumothorax then developed, and Dr. Roswell Park performed an Estlander's operation. At time of examination patient is tubercular.

Mr. S. W., medical student. Typhoid reaction negative. Blood examined on admission to hospital. Forty-eight hours thereafter developed into a case of measles.

Mr. H., aged forty-two years, United States. Typhoid reaction negative. During past six weeks has not felt well. Had chills and fever, stopped work ten days ago. During past week has been getting deaf, and now hears with difficulty.

We have also examined the serum of patients living at a distance, in order to show the efficacy of placing the drop of blood on an ordinary visiting card and transmitting the same by mail. We have been enabled, by the courtesy of Dr. Gamble, of the Rochester City Hospital, to prove the value of the test in four undoubted cases.

For this purpose we made use of a blank similar to one in use by the board of health of the Province of Quebec. The blank is filled out by the physician in attendance and the card upon which is placed the drop of blood is correspondingly numbered.

CARD MARKED NO. 1. *Typhoid reaction is present.*

Name of patient, *Stella McI.* Sex, *female.* Age, *38.*

Mark any of the following symptoms.	Epistaxis, *Yes.* Diarrhœa, *Yes.* Iliac tenderness, *Marked.* Enlarged spleen, *Yes.*	Fever, *104° F.* Delirium, *Yes.* Roseola, —.	Case mild, ordinary, severe.

Opinion of physician on probable nature of disease: *Typhoid fever.*

Has patient already had typhoid fever? If so, when? *No.*

State suspected source of infection? *Nurse cared for typhoid patient.*

Is patient now convalescing? *Yes.*

Has there been a relapse? *No.*

CARD MARKED NO. 2. *Motion stopped and bacilli agglutinated at end of five minutes.*

Name of patient, *B. B.* Sex, *female.* Age, *21.*

Mark any of the following symptoms.	Epistaxis, *Yes.* Diarrhœa, *No.* Iliac tenderness, *No.* Enlarged spleen, *Yes.*	Fever, *105° F.* Delirium, *Yes.* Roseola, *Marked.*	Case mild, ordinary, *severe.*

Opinion of physician on probable nature of disease: *Typhoid.*

Has patient already had typhoid fever? If so, when? *No.*

State suspected source of infection? *Unknown.*

Is patient now convalescing? *Yes.*

Has there been a relapse? *Two relapses; very bad case.*

CARD MARKED NO. 3. *Typhoid reaction present.*

Name of patient, *G. H.* Sex, *male.* Age, *22.*

Mark any of the following symptoms.	Epistaxis, *No.* Diarrhœa, *Constipation.* Iliac tenderness, *No.* Enlarged spleen, *Yes.*	Fever, *100·2°* to *104·2° for 11 days.* Delirium, *No.* Roseola, *Very few.*	Case mild, *ordinary,* severe.

Opinion of physician on probable nature of disease: *Typhoid fever.*

Has patient already had typhoid fever? If so, when? *No.*

State suspected source of infection? *Orderly. Has handled the stools of typhoids.*

Is patient now convalescing? *No.*

Has there been a relapse? *No.*

CARD MARKED NO. 4. *Typhoid reaction present and* PROMPT.

Name of patient, *C. H. (colored).* Sex, *female.* Age, *26.*

Mark any of the following symptoms.	Epistaxis, *No.* Diarrhœa, *Marked.* Iliac tenderness, *Yes.*	Enlarged spleen, *Yes.* Fever, *104·2° F.* Delirium, *No.* Roseola, (?)	Case mild, ordinary, *severe.*

Opinion of physician on probable nature of disease: *Typhoid fever.*

Has patient already had typhoid fever? If so, when? *Unknown.*

State suspected source of infection? *Probably water supply. Two cases in same house.*

Is patient now convalescing? *Yes.*

Has there been a relapse? *One relapse.*

We did not examine the blood specimens of these four cases until twelve days after their receipt, demonstrating to us that the blood need not be freshly withdrawn in order to get the reaction. We venture to say that the reaction may be obtained weeks and even months after the blood is withdrawn.

Dr. G. H. Stover, of Eaton, Colorado, at our solicitation sent to us suspected blood specimens. The histories of the cases followed:

CARD MARKED NO. 1. *Typhoid reaction present.*

Name of patient, *Vincent L.* Sex, *male.* Age, *13.*

Mark any of the following symptoms.	Epistaxis, *Yes.* Diarrhœa, *Yes.* Iliac tenderness, *Yes.* Enlarged spleen, *Yes.*	Fever, *104·5° F.* Delirium, *Yes.* Roseola, *Plentiful.*	Case mild, ordinary, *severe.*

Opinion of physician on probable nature of disease: *Typhoid fever.*

Has patient already had typhoid fever? If so, when? *No.*

State suspected source of infection? *Family had lived in a small house; in the cellar there were decomposing potatoes. Patient drank of water kept in a jar in the cellar.*

Is patient now convalescing? *Yes.*

Has there been a relapse? *No.*

CARD MARKED NO. 2. *Typhoid reaction present.*

Name of patient, *W. L.* Sex, *male.* Age, *17.*

Mark any of the following symptoms.	Epistaxis, *No.* Diarrhœa, *No.* Iliac tenderness, *Slight.* Enlarged spleen, *Can not say.*	Fever, *104·2° F.* Delirium, *Yes.* Roseola, *Plentiful.*	Case mild, *ordinary,* severe.

Opinion of physician on probable nature of disease: *Typhoid.*

Has patient already had typhoid fever? If so, when? *No.*

State suspected source of infection? *Same as preceding case. Patients brothers.*

Is patient now convalescing? *Yes.*

Has there been a relapse? *No.*

We also examined four other samples sent us by Dr. Stover, with negative results.

The first was a specimen of the doctor's blood, the second from a man who had fever, but no typhoidal symptoms a month previously, and the third and fourth samples were from healthy adults.

From our experience with this test we draw the following conclusions:

1. We believe Widal's typhoid reaction to be the most efficient of all the tests for the positive diagnosis of typhoid fever.
2. The test is particularly adapted to hospital and municipal laboratories.
3. It is especially indicated in cases where the case in hand is suspected to be typhoid, but where other diseases with similar symptoms can not satisfactorily be excluded.
4. The intensity of the reaction offers a critical sign as to the severity and prognosis of the case.
5. The reaction is obtained from the fourth to the sixth day of the disease and continues some time after convalescence.
6. It is desirable to make a second or third examination in doubtful cases.
7. The dried serum collected on a card is readily utilized, even after a great lapse of time after the withdrawal of the blood, and is practicable because of the ease with which it can be transmitted by mail, even from great distances.
8. It is most satisfactory to use bouillon cultures of the typhoid bacilli, because in a liquid medium bacilli are not fixed and have opportunities for free motility.
9. It is important to work with bouillon cultures not older than twenty-four hours. Where they are older the motility of the bacilli is checked, unfitting the cultures for accurate work.

We wish to express thanks to Dr. Wyatt Johnston, of Montreal, for the original typhoid culture, and to Dr. William G. Bissell, bacteriologist to the health department, for many kindnesses while pursuing this work in the municipal laboratory.

DR. JULIUS ULLMAN, 400 FRANKLIN STREET.
DR. ALBERT E. WOEHNERT, 182 FARGO AVENUE.

THE SERUM DIAGNOSIS OF HOG CHOLERA.

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IN July, 1896, Widal[*] described a method which he had recently discovered for diagnosticating with ease and certainty the existence of typhoid fever.

The importance of such a discovery is apparent, since by this means physicians can ascertain the existence of this disease with comparative ease. The method is as follows:

A bouillon culture of the typhoid bacillus is examined microscopically to determine the motility and isolation of the individual bacteria. A few drops of the culture are placed in a watch glass and with this is mixed a drop of blood drawn from the finger tip of the patient. Hanging-drop preparations are then made from the mixture of culture and blood. A most interesting series of phenomena presents itself. The bacilli are not isolated and moving as they do in ordinary cultures, but lose their motility and become agglutinated and joined together in masses which are separated by wide spaces. The clear spaces are dotted with less motile bacilli, and these can be seen approaching the masses and finally adhering to them. Widal observed these phenomena in preparations made from patients in different stages of the disease. They did not appear in preparations made from the blood of persons in health, and he argues therefrom the reliability of the test. Nor did the phenomena appear in preparations made from patients suffering with other diseases—such as nephritis, tuberculosis, pneumonia, icterus, and rheumatism; but the bacilli remained motile, and exhibited no tendency to become non-motile and massed together in clumps.

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[*] *La Presse médicale*, July 29, 1896.

These very interesting results determined the writer to apply the test in hog cholera, a disease resembling typhoid fever in many respects. In these observations, which are preliminary to a more extended investigation of the subject, hog cholera was induced in a rabbit by the subcutaneous injection of a bouillon culture.

On the fifth day after inoculation a small piece of the ear of the rabbit was excised and clean cover-glasses were smeared with the small amount of blood which oozed from the wound. No attempt was made to prevent the drying of the preparations, and the result obtained would indicate that evaporation of the liquid portion of the blood does not prevent the appearance of the characteristic phenomena. When the preparations were perfectly dry, a drop of bouillon culture of the hog-cholera bacillus was placed upon the stratum of dried blood on the cover-glass, which was then inverted over a hollow-ground slide and examined carefully with a Zeiss two-millimetre apochromatic immersion lens combined with a No. 4 ocular. By the time the slide was prepared and focused, the bacilli, which had been previously observed to be motile in a control preparation, became motionless and agglutinated in clumps, exactly as was described by Widal in reference to the typhoid bacilli. A control experiment was made with the blood from a normal rabbit, with the result that the hog-cholera bacilli did not exhibit the slightest tendency to be affected in any way. Similar experiments were made to determine the effect of hog-cholera blood serum upon the typhoid-fever bacillus and the *Bacillus coli communis*. The results were negative. The absence of any effect of the hog-cholera serum upon the typhoid bacillus and also upon the *Bacillus coli communis* is of interest on account of the resemblance of these three organisms in other ways.

Owing to the obscurity of the symptoms usually presented in hog cholera, it would seem that a method which would render a correct diagnosis would be of considerable value, it being by no means an easy task to diagnosticate hog cholera from the physical symptoms alone. As it is possible that a cure or preventive of hog cholera based upon antitoxic-serum therapy will be discovered, it would be of great advantage to have a method for detecting the existence of the disease in its incipiency.

While the experiments upon rabbits are not offered as positive evidence that the same results could be obtained from affected hogs, it is reasonable to presume that a similar result is within the range of probability.

February 5, 1897.

FORCED RESPIRATION IN A CASE OF CARBOLIC-ACID POISONING.

By N. R. NORTON, M.D.,
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M. D., aged forty-one, a woman, was admitted April 29, 1896, to the service of Dr. Walter B. James, through whose kindness the case is reported. About half an hour before admission she had taken an unknown but considerable quantity of ninety-five per cent. carbolic acid, with suicidal intent.

When found by the ambulance surgeon she was unconscious, face and extremities markedly cyanosed, frothy fluid coming from the mouth, breathing slow, pulse rapid but bounding, tracheal rattle, and marked œdema of lungs.

On admission to the emergency ward the condition was unchanged. There were marks of carbolic acid in the mouth and upon the chin. The pupils were contracted. Respirations about eight to the minute and very labored. The tracheal rattle and œdema of the lungs persisted. The breathing was that of laryngeal stenosis, apparently due to œdema of the glottis, and a central depression of respiration. The face and extremities were very cyanotic, but the pulse was regular, full, and bounding.

Within two minutes the pulse quickly became rapid, thready, and irregular. The respirations became shallow and gasping, and there was every indication that the patient would live but a few minutes.

As the immediate indication was to relieve the laryngeal and pulmonary condition, an attempt was made to pass the laryngeal tube of Dr. O'Dwyer's forced-respiration apparatus. The first tube used was found to be too large, and while it was being changed Silvester's artificial respiration was practised, with inhalations of amyl nitrite. At this time natural respirations had practically stopped. The laryngeal tube was now readily introduced, and forced respirations, about twelve to the minute, were begun.

She responded immediately. At the end of five minutes the cyanosis had entirely disappeared, and the pulse became full, strong, and about ninety.

The stomach tube was now passed, the laryngeal tube being left *in situ*. The gastric contents had a strong odor of carbolic acid. The stomach was thoroughly washed; the last washing was with a solution of magnesium sulphate, some being left in after the removal of the œsophageal tube.

During this time forced respiration had been con tinued. The reflexes began to return and there were attempts at coughing, causing the escape of considerable quantities of frothy fluid through and around the tube. At the expiration of fifteen minutes the condition was improved enough to warrant the withdrawal of the tube. She was then given sulphate of strychnine, a thirtieth of a grain, sulphate of atropine, a seventy-fifth of a grain, subcutaneously, and a stimulating enema of whisky and hot water.

During the next few hours she expectorated about a pint of frothy fluid. The pulse became full, with some tension, for which nitroglycerin, a hundredth of a grain, was exhibited every hour.

On the second day apathy still remained. Twelve ounces of smoky urine were passed normally, of a specific gravity of 1.028, containing a trace of albumin, but no casts or blood, and giving the reaction for carbolic acid.

Throughout both lungs many bubbling râles could be heard. Pulse still irregular, and with some tension. The third day the temperature reached its highest point, 103° F. Patient was perfectly rational, breathing normal, voice husky, and slight cough.

From this time on the temperature gradually declined, pulse lost its tension and became regular, the signs in the lungs cleared up, she passed an average amount of thirty ounces of urine for twenty-four hours, and left the hospital on the eighth day.

The case has seemed of interest chiefly for the quick relief afforded by Dr. O'Dwyer's forced-respiration apparatus in a condition which, without it, would undoubtedly have caused death. So far as can be learned, it is the only case in which it has been used for this purpose with success.

ANISOMETROPIA.

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Cases of anisometropia where the refractive condition of the two eyes is very different are not at all uncommon. Slight differences between the two eyes are very frequent—in fact, it is more common to find a slight difference in some respect between the eyes than to find them exactly alike. By anisometropia we mean a greater difference than this, though there is no hard-and-fast line drawn by which to decide when the difference between the two eyes becomes sufficient to warrant this distinct title. Noyes thinks one dioptre is sufficient. Landolt says: "Anisometropia exists whenever the two eyes demand, in order that each shall possess its maximum of visual acuteness, or in order to present to the bserver the same clearness in their ophthalmoscopic nages, two different numbers of spectacle glasses." This definition, however, would include many cases hich ordinarily we do not group under this category; t least, we shall not consider them in this paper.

Numerous forms will at once suggest themselves. ne eye may be emmetropic, while its fellow is either myopic or hyperopic; both may be hyperopic or myopic, but in a different degree; or one may be hyperopic while the other is myopic. Of course, astigmatism may be present in either one or both of the eyes.

This inequality between the two eyes may be congenital or acquired. Aphakia, the result of cataract extraction, is the most frequent example of the acquired form. Except when it is the result of an operation, or of an accident, as the unilateral luxation of the lens, or of some corneal change, it may be considered congenital and the result of unequal development of the eyes. Not infrequently we find some asymmetry between the two orbits, or even between the two sides of the head, in these cases, and it might prove a not uninteresting study to endeavor, if possible, to discover some relation between the two. Donders endeavored to ascertain this, but did not succeed. "I can only in general maintain," he says "that at the side where the strongest refraction, or rather the longest visual axis, occurs, the orbit (and with it the eye) is situated closer to the median line, while its surrounding edges are placed more forward." "There is," he thinks, "a connection between the two, but that the connection is not absolute is not strange, for just as with differing form and position of the orbits the two eyes may be emmetropic, it must be possible that equality of the eyes should exist with difference of the orbits of the same individual." We know little if anything more upon that subject to-day than was known thirty years ago, and these words of Donders's well express our present opinions.

In regard to the vision in these cases, one of three things is possible:

1. In the first place, one eye may constantly be used while the other is permanently excluded.

2. He may use either eye alternately. For example, the one eye may be used entirely for distant vision, and the other for close work.

3. He may possess binocular vision and use both eyes simultaneously, even though without the aid of glasses the objects looked at are not seen with equal distinctness by the two eyes. He can not make an unequal effort of accommodation with the two eyes in order to overcome the difference, and he therefore must combine the distinct retinal image of the one eye with the diffuse image of the other eye. The difference which may exist with binocular vision still preserved varies greatly, and it is claimed by some, as von Graefe asserted, that sometimes even an aphakic eye may co-operate with its normal fellow eye in binocular vision.

In the first group, when useful vision exists only with one eye and that always the same one, the treatment is very simple. We measure only the good eye. It is needless to mention any such cases.

In the second group, when the patient can use either eye alternately, we must consult the sensations of the patient and be directed by them. Where one eye is emmetropic and the other myopic, the person will not infrequently get along perfectly well throughout life, even in old age, without glasses, using the emmetropic eye for distant vision and the myopic eye for close work. Some authorities, as Hartridge, advise against correction in such a case, but frequently the patient is more comfortable with both eyes corrected. Binocular vision can be obtained with the aid of glasses, and this group thus emerges into the third group. "Inasmuch as the correcting lens placed at the anterior focus of the eye produces images in the retina of equal size, in all forms of ametropia, no theoretical reason exists," says de Schweinitz, "for not correcting both eyes." Let us illustrate:

Case I.—Miss A. K., aged sixteen years, has been troubled with dizziness after use of the eyes in reading; often feels thus after school. The eyes tire, but she has no headaches, and there is no blurring. V. O. D. $\frac{3}{45}$, O. S. $\frac{5}{5}$. Under atropine the refraction was as follows:

O. D. $-$ 2·50 s. $\bigcirc$ $-$ ·25 c. axis 15°, V. $\frac{5}{4}$.
O. S. $+$ ·25 s., V. $\frac{5}{4}$.

Through the correction there is esophoria 1.5° with right hyperphoria 1°. Diplopia is present, but this is overcome by a 1° prism base up before O. S. The following glasses were ordered:

O. D. $-$ 2·75 s. $\bigcirc$ $-$ 25, axis 15°.
O. S. 1° prism base up.

With these glasses muscle tests show esophoria 1.5° at distance, with no vertical deviation, and in accommodation the muscles vary from orthophoria to exophoria 7°. Measurement of the accommodation showed:

O. D. Jaeger No. 1, pp. 15·5 ctm.
O. S. Jaeger No. 1, pp. 15 ctm.

At first she felt a little dizzy with the glasses, but in half an hour she felt comfortable, and since wearing the glasses, now ten months, she has experienced complete relief.

In some of the cases of anisometropia where there is a considerable error of refraction in each eye, the point might be justly raised that we are not sure that the relief is due to the correction of both eyes, for if we had simply corrected the better eye, we might have obtained the same result. This objection will not hold good in the case just cited, where we have practically a plain glass before the one eye, or, to speak more accurately, a weak prism to establish equilibrium between the two eyes. As this type best illustrates the advantages of correcting both eyes, several other cases may be briefly mentioned.

Case II.—E. J. R., a man, aged twenty-five years, complains of frontal and temporal headaches caused by use of the eyes. He is also greatly annoyed by congestion of the conjunctiva. He says he can see better close at hand with the left eye. V. O. D. $\frac{5}{4}$, O. S. $\frac{5}{45}$. Homatropine was instilled and the refraction found to be as follows:

O. D. $-$ ·25 s. $= \frac{5}{4}$.
O. S. $-$ 2·25 s. $\bigcirc$ $-$ ·62 c., axis 75° $= \frac{5}{4}$.

Through the glasses esophoria is 3.5° and right hyperphoria 2°. Accommodation is practically equal in the two eyes, as with Jaeger No. 1 pp. is 13 ctm. with O. D. and 13.5 ctm. with O. S.

Three months later, August, 1895, he reported that he had no more headaches, and could use his eyes with perfect comfort. The congestion of the eyes was greatly lessened.

Case III.—F. C. C., a man, aged twenty-three years, came to the office complaining of blurring when he uses his eyes for any length of time, and also of smarting. Can not see well on the street. Has no headaches. Atropine was instilled and the refraction was found to be:

O. D., plain glass, $\frac{5}{4}$.
O. S. $-$ 1·25 s. $\bigcirc$ $-$ ·75 c., axis 165°, $\frac{5}{5}$.

Muscle tests showed exophoria 4.5°, right hyperphoria 1°, adduction 15°. Prism exercise was ordered. The result was complete relief. Examination almost two months later showed adduction 40°, but exophoria was still 4°, and right hyperphoria 1°.

Case IV.—N. M., a lad, aged nineteen years, complained of almost daily headaches, worse after use of eyes; also of blurring after reading a short while. V. O. D. $\frac{6}{36}$, O. S. $\frac{6}{6}$? Atropine was instilled with the following result:

O. D. 1·75, axis 120°, $\frac{6}{12}$.
O. S. plain glass, $\frac{6}{6}$.

Three months later the headaches are reported to be very much better and he can use his eyes with comfort.

Case V.—C. J. W., aged twenty-three years, was troubled with some pain in the eyes after use. V. O. D. $\frac{6}{5}$, O. S. $\frac{6}{30}$. Examination under homatropine gave:

O. D. plain glass, $\frac{6}{5}$.
O. S. $+$ 1·25, axis 95°, $\frac{6}{6}$?

Through glasses Jaeger No. 1 pp. 16 ctm. in each eye, esophoria 1° at distance, exophoria 2° in accommodation. Binocular vision in reading was readily proved by pencil held in front of the page.

It is surprising how frequently we meet with patients who have never known of the difference between the eyes until they come to our office, while others come to consult us because they have just recently discovered this difference. More frequently, however, they have known it, have considered the one eye useless, and not infrequently have been upheld in this opinion by some all-wise optician, or even by an oculist. Their surprise will be great, and likewise their pleasure, when they find that this supposedly useless eye can be made to see and work with its fellow.

It may be well to give very briefly a few typical illustrative cases of anisometropia when there is an error of refraction of greater or less degree in each eye. The most satisfactory and comfortable results in treating these and, in fact, all cases of anisometropia are sometimes obtained by considering "one eye as the working eye and the other as the helping, the latter being gradually trained up to better work."

"A good empirical rule," says Oliver, "is to put as much of the spherical with all of the cylinder upon the better eye, and to add that spherical to the cylinder before the fellow eye which will give the easiest and best associated vision." In determining this, the muscle tests both at distance and in accommodation may be a considerable aid. Each case must largely be judged for itself, but as far as possible I try to give as nearly the full correction for each eye as can be worn.

Case VI.—Mrs. J., aged twenty-seven years, complained of headaches, pain in eyes, burning and smarting of them, and blurring of vision in reading.

Refraction under homatropine:

O. D. + 50 c., axis 90°, $\frac{5}{5}$.

O. S. – 7·50 s. ⊃ – 1·75 c., axis 180°, $\frac{5}{9}$.

Orthophoria laterally at five metres and in accommodation. Right hyperphoria 3°. At first I thought it almost useless to put any correction before the left eye, but I explained the condition to her, and she was anxious to try a glass for the poor eye, so I ordered full correction for O. D., and 3 D. less than full correction in the spherical portion of O. S. She had very little difficulty in getting accustomed to the glasses, and reported an immediate improvement of all the symptoms. All pain in the eyes and headaches ceased, and she has desired to try a stronger glass before O. S.

Some patients have little or no difficulty in getting accustomed to the glasses, but with others it is a hard struggle. The following case is a good illustration:

Case VII.—Miss P. B., aged thirty years, suffered much with frontal and vertex headaches. Eyes smart a great deal, and she can scarcely read at all by artificial light.

Refraction under atropine:

O. D. – 4·50 s. ⊃ – 1 c., axis 180°, $\frac{6}{9}$?

O. S. – ·50 s. ⊃ + 1 c., axis 90°, $\frac{6}{6}$?

The headaches were helped at once, but the glasses made her very dizzy and greatly annoyed her in her work. There was no improvement in this respect in a month, and I decided to weaken the right glass unless she was soon relieved. After wearing the glasses three months she reported that she is getting along very nicely, has no more headaches nor dizziness nor trouble of any kind.

Case VIII.—M. D., a girl, aged eleven years. Symptoms: Can't see well at distance, holds book too close, frontal headaches and pain in eyes. V. O. D. $\frac{6}{36}$, O. S. $\frac{6}{24}$. Refraction under atropine:

O. D. – ·50 ⊃ + 2·50, axis 90°, $\frac{6}{9}$.

O. S. – ·25 ⊃ – ·75, axis 15°, $\frac{6}{9}$.

Result: Complete relief, sees much better, and has no more headaches.

Case IX.—E. B., a girl, aged eighteen years. Symptoms: Pain in eyes, headaches, blurring upon use of eyes. V. O. D. $\frac{6}{30}$, O. S. $\frac{6}{18}$. Refraction under atropine:

O. D. – 1·25 ⊃ + 2·25, axis 90°, $\frac{6}{6}$.

O. S. – 1·25 ⊃ + ·50, axis 90°, $\frac{6}{6}$.

Result: Complete relief.

Case X.—H. P. McI., a man, aged forty-eight years. Symptoms: Frontal headaches, but apparently not due entirely to eyes. V. O. D. $\frac{5}{9}$, O. S. $\frac{5}{4}$. Refraction under homatropine:

O. D. – 1·25 ⊃ + 1·75, axis 165°, $\frac{5}{5}$.

O. S. + ·25, axis 90°, $\frac{5}{3}$.

Esophoria 1°, no hyperphoria. With + 1·50 s. added for reading, Jaeger No. 1 is read from 19 to 45 ctm. Exophoria 3° to 7° in accommodation.

Result: Considerably helped, but he still has some difficulty with the head.

Case XI.—M. C., a woman, aged forty-two years. Symptoms: Trouble with eyes in reading and sewing. Eyes become red, especially the left; frontal headaches worse after use of eyes. V. O. D. $\frac{6}{60}$, O. S. $\frac{6}{9}$? Refraction under homatropine:

O. D. + 1 s. ⊃ – 4 c., axis 180°, $\frac{6}{6}$.

O. S. – ·25 s. $\frac{6}{6}$.

Result: At the end of a month she reported that the eyes were greatly improved, but she still had some difficulty in using them. No more headaches. Have not seen her for ten months.

Case XII.—J. H. C., a man, aged forty-one years. Symptoms: Inequality of vision in the two eyes, discovered only recently; some blurring when he uses eyes. V. O. D. $\frac{6}{6}$? O. S. $\frac{6}{45}$. Refraction with homatropine:

O. D. – ·50 s. $\frac{6}{5}$.

O. S. – 2·50 s. ⊃ – ·37 c., axis 75°, $\frac{6}{5}$?

Result: Glasses decided help.

Case XIII.—M. J. M., a woman, aged twenty-four years. Symptoms: Eyes ache after use, dizziness, blurring, itching of lids, great effort to focus. V. O. D. $\frac{6}{30}$? O. S. $\frac{6}{7{\cdot}5}$? Refraction with atropine:

O. D. – 1·50 s. ⊃ + 3·75 c., axis 105°, $\frac{6}{7{\cdot}5}$?

O. S. + ·25 s. ⊃ + 1·00 c., axis 75°, $\frac{6}{6}$.

Result: Too soon to tell.

I might cite numerous other cases, but these few are enough to show that in many persons who are afflicted with a so-called useless eye, that eye can be helped much in seeing, can be made to share somewhat at least in the work of the better eye, and therefore should not be neglected and ignored.

514 New England Building.

OVARIAN FLUID.

By WILLIAM MOSER, M. D.,
BROOKLYN,
PATHOLOGIST TO ST. CATHARINE'S HOSPITAL.

Ovarian fluid varies in consistence in different cases. In some cases it is a clear, serous, albuminous fluid, while in others it is very viscid—in fact, so much so that it fails to pass through the cannula. The color may be red (due to admixture of blood), green, or brown. Under the microscope the most important elements to be seen are the following:

1. White blood-cells of varying sizes.
2. Red blood-cells.
3. Gluge's corpuscles.
4. Epithelial cells of varying shape and size.
5. Colloid bodies—some small, others large.
6. Cholesterin crystals.
7. Small granular cells with apparently no nucleus—the so-called Drysdale ovarian granular cell.
8. Scales of horny epithelium.
9. Brown pigment.
10. Large, coarsely granular cells.
11. Granular matter and fat needles.

"For the microscopist and pathologist all these are of interest. For the ovariotomist this is the chief point of importance: Is there any characteristic pathognomonic cell or element upon the presence of which a positive diagnosis of ovarian cyst may be based?" (Thomas.) I fear this question must be answered in the negative. I fail to find any one cell which I would regard as pathognomonic. A physician once sent me a quantity of fluid aspirated from the abdominal cavity, with the request that I should report as to its character. I reported "probable ovarian cyst." Some time afterward the patient was operated upon by Dr. Kennedy, of St. Catharine's Hospital, and it proved to be an ovarian cyst. In making this probable diagnosis I relied upon the following:

1. An unusually large number of colloid bodies.
2. An exceptional number—*i. e.*, as compared to ascitic fluid—of cholesterin crystals.
3. Cells, quite numerous, in a state of fatty degeneration—Gluge's corpuscles.
4. Very large, coarsely granular cells, which may or may not contain fat drops.
5. Epithelial cells of varying shape.
6. Small, apparently anuclear granular cells.

In taking these elements collectively I ventured the diagnosis of ovarian cyst, and placed most reliance on the unusually large number of colloid bodies and cholesterin crystals—the latter may occur in such quantities as to give the fluid a glistening appearance (Winckel)—the large, flat, fatty epithelial cells, smaller flat cells, ciliated epithelial cells, and Gluge's corpuscles. In reference to Drysdale's granular ovarian cells, I can only say that I have seen small granular cells in which, upon the addition of acetic acid, no nucleus could be discerned. I am in doubt as to their nature, and feel reluctant to attach much practical significance to their presence. The fluid is usually alkaline in reaction. The specific gravity presents such variations that it is of little value for diagnostic purposes.* At times the cells are so filled with colloid material, or are in such a state of fatty degeneration, that it is not always easy to say what kind of cell one is dealing with. Among the varied forms of epithelial cells, there sometimes occurs a very large, coarsely granular (No. 10) cell, with or without fat drops, which I believe is of some aid in the diagnosis. From an examination of a number of specimens of ovarian fluid I feel inclined to believe that there is no one pathognomonic cell; yet I do feel justified in stating that when we carefully take into consideration all the elements referred to, a probable if not positive diagnosis can in many cases be given.

158 Ross Street.

Therapeutical Notes.

The Treatment of Boils.—The *Journal des praticiens* for January 23d publishes the following method for preventing the formation of boils, which is recommended by M. Albert Robin in the *Bulletin général de thérapeutique:* The patient should be given tar-water as a drink, and should take every day three capsules containing the following:

℞ Sublimed sulphur	1.5 grain;
Pulverized camphor...............	0.3 "

M.

Wherever there is any redness, or there are threatening indications of the formation of a boil, the spot should be painted with tincture of iodine, and in this way it may be arrested. When the boil has formed, the contents should be evacuated as completely as possible. When the core has been taken out, the following ointment is introduced into the wound by means of a brush:

℞ Sublimed sulphur, Pulverized camphor,	each ..... 150 grains;
Glycerin...............	a sufficient quantity.

M.

The boil is then covered with a piece of linen on which this ointment has been spread. Afterward the entire region of the eruption should be sprayed with a solution of equal parts of carbolic acid and water four times a day after the boil has been carefully washed with boric-acid water; then a dressing of the ointment is again applied.

Phenocoll Hydrochloride in Acute Articular Rheumatism.—Dr. Max Olny, of Halle (*Therapeutische Monatshefte*, December, 1896), reports the results obtained in a series of experiments. The remedy was used in sixteen cases in doses of fifteen grains three times a day, and was prompt in its action. In three cases it failed; in all the others, some of which had been treated without success with sodium salicylate, it acted promptly. In cases that were not of long standing the pain diminished after eight scruples had been taken, and complete recovery after six drachms. The average time of treatment was thirty days. In recurring cases, on an average six drachms were required and the treatment lasted for thirty-three days.

Better results were, therefore, obtained with phenocoll hydrochloride than with salicylate of sodium. The author advises continuing the use of phenocoll for a few days after the pains have subsided, giving fifteen grains every second day, morning and evening. If after seven or eight days no relapse has occurred, a definitive cure may be recorded.

The influence of the remedy on the temperature is reported as quite variable. The temperature becomes normal as soon as the affection of the joints has disappeared. Considerable perspiration was observed with weak patient, but no other by-effects, such as cyanosis, collapse, etc., were noticed.

The Treatment of Pityriasis Versicolor.—Dr. Brocq (*Journal de médecine et de chirurgie pratiques ; Journal des praticiens*, January 16, 1897) recommends a sulphur bath with the use of the following soap:

℞ Soft potash soap...............	60 parts;
Salicylic acid....................	2 "
Resorcin........................	1 part.

M.

When the patient comes out of the bath the affected part should be rubbed with a coarse towel and then coated with this ointment:

℞ Salicylic acid..................	9 grains;
Precipitated sulphur............	30 "
Zinc oxide.......................	45 "
Linseed oil, Siliceous earth, Lanolin,	each........... 75 "

M.

To remove the coating, which dries on like glue, pure vaseline or oil should be smeared over it, and then brown soap or a soap containing salicylic acid or naphthol rubbed upon it.

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* A very high specific gravity (1.030 to 1.060), with cylindrical epithelial cells and large numbers of colloid bodies and cholesterin crystals affords suspicion of ovarian fluid.

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CONSIDERATIONS ON HYPNOTICS.

IN the *Wiener klinische Wochenschrift* for February 4th, Dr. Pilcz, an assistant physician to a Vienna lunatic asylum, has a somewhat elaborate article on the hypnotics that are most commonly employed. He treats particularly of chloral, paraldehyde, amylene hydrate, sulphonal, trional, and pellotine, but he prefaces his treatment of individual drugs with some general remarks, and it is with these alone that we have space to deal here.

From the ætiological point of view, he divides cases of insomnia into two main groups. The first group is made up of examples of agrypnia pure and simple, such as is met with in neurasthenics, very commonly n senility, and in the most varied mental disturbances, especially the acute ones. The second group embraces cases in which sleeplessness is due to pain or other uncomfortable bodily sensations, such as itching, the irriation of coughing, and the like, or to worry.

It is only in cases of the first group that the true hypnotics are effectual, and they fail almost entirely to vercome sleeplessness due to painful irritation or to nxiety. In cases of the second group opium and its erivatives, particularly morphine, are sovereign remeies, and to such cases alone should their employment o induce sleep be restricted. Opiates are not true hypotics; they operate rather by doing away with the cause f the sleeplessness by virtue of their anodyne proprty. When, therefore, the less potent antineuralgics nd anodynes, such as antipyrine, phenacetine, etc., fail —and they should always be tried first—morphine may e resorted to, also in cases of sleeplessness due to anxty, as in melancholia. In such cases chloral, sulphol, etc., would prove ineffective. On the other hand, iates should never be given for essentially "nervous" somnia. In some cases, especially in psychiatric prace, success is not to be attained either with morphine one or with a hypnotic; the two must be combined. he administration of opium and its derivatives by the outh entails far less danger of leading to the opium abit than their subcutaneous injection, as is well nown.

As regards the true hypnotics, what is most desirable in them is that they should be sure and free from danger; after that, that they should not have the property of gradually ceasing to work unless given in increased doses, and that they should not be unpleasant to take. But we possess no such ideal hypnotic. Chloral, certain as it is in its action, is prone to induce disagreeable phenomena in the vascular apparatus, and to paraldehyde, indispensable as it is in psychiatric practice, there attaches the disadvantage of its intense taste and odor, the latter perceptible in the breath, which renders its employment in private practice almost out of the question. As for sulphonal, its careless use may give rise to danger to life; on the other hand, there are many hypnotics that have not yet been known to exert a dangerous action, but they are quite untrustworthy.

THE LICENSING OF SPECTACLE-FITTERS IN THE STATE OF NEW YORK.

IT is to be regretted that at the hearing, on Thursday of last week, nobody appeared against the Bill to Regulate the Practice of Optometry in the State of New York, save Dr. Wynkoop, the secretary of the Medical Society of Onondaga, and Dr. Marlow, representing the Syracuse Academy of Medicine, while the opticians were represented by counsel. In this issue we print Dr. Marlow's protest, which we think will commend itself to fair-minded readers as a true and temperate statement of the considerations which ought to be borne in mind with regard to the matter.

Dr. Marlow informs us that the opticians consented to certain amendments, the chief of which was that one of the proposed examiners should be a physician, together with one to the effect that the bill should not apply to physicians now or in the future, thereby, as he justly says, admitting the truth of the contention that the work of fitting glasses is medical in its nature. He goes on to say that the opticians stated, and rightly, he thinks, that a physician's ordinary education did not render him capable of fitting glasses, but they did not allude to the fact that most physicians who entered upon such work prepared themselves by taking a special course of instruction in it. Dr. Marlow thinks that such a course, now optional, should be made compulsory, and an examination demanded to test its efficiency. He thinks such an amendment of the medical laws would not be seriously opposed, that it would advance medical education, and that it would immensely strengthen the position taken by the profession on this question.

The public mind, says Dr. Marlow, is hardly prepared to be told that everybody must go to an oculist to have his eyes examined before getting glasses, which, he remarks, is the logical outcome of our position; but people are beginning to understand that when the young complain of eye symptoms there must be some intrinsic defect of the eyes that requires attention from an ophthalmologist. He thinks the principle contended for by the medical profession might be upheld, the public educated in regard to the matter, and the majority of the victims of the present condition of things saved by passing the bill so amended as not to confer on opticians the right to prescribe glasses for any person under the age of twenty-five years, and also so amended as to require dispensing opticians to have the proper technical education. The bill, thus amended, would, he thinks, rid the State of the traveling pedlars of glasses who now abound.

Dr. Marlow has evidently given serious thought to the subject on which he writes, and what he says about it seems to us well worthy of the attention of the legislature. His protest strikes us as a very strong argument against the bill as it now stands.

MINOR PARAGRAPHS.

ANOTHER DOCTOR IN GENERAL LITERATURE.

A dainty little volume of verses by Dr. Francis Brooks, entitled *Margins*, has lately been published by Searle & Gorton, of Chicago. The somewhat puzzling title of the little book is explained in the opening poem, headed Titular, in these lines:

> So, mayhap, just on the marge
> Of superior and truer,
> Lovelier things, these verses cling—

So the author is modest, and that fact at once prejudices us in favor of his verses, although we admit that it ought not to do so. There is no index and there is no table of contents, but the book is so small, consisting of only eighty duodecimo pages, that no considerable time need be lost in finding any particular poem. There are thirty-eight poems in the book, most of them very short. They are all expressive of feeling founded on strictly correct views. One of them, entitled The Forge, has a glorious swing; another, called Misanthropy, is pervaded with the essence of true religion; and another, without a title, seems like a warning to our country—overdrawn, to be sure, but none the less wholesome. It reads as follows:

> Cursed inebriate nation,
> Lo! where she wallows in gold;
> Drunk with the dollar's damnation,
> Withered and sottishly old.
>
> Crazed by the absinthe of riches,
> Bleared and bewildered she goes;
> Shrieks, as she staggers and pitches—
> Money will solace my woes.

Dr. Brooks's versification is very varied, and it is quite uneven in merit, but his verses are pleasing and their motives are entirely pure and lovely. We hope more of them will be published.

THE INTERNATIONAL SANITARY CONFERENCE AT VENICE.

The President has detailed Passed Assistant Surgeon H. D. Geddings, of the Marine-Hospital Service, to represent the United States at the Sanitary Conference which has been called by the Italian government to consider the existing plague in India and to advise and agree upon measures to prevent its extension to Europe. Dr. Geddings has had large practical experience in land and maritime quarantine duty and is an able bacteriologist. In this connection it would seem desirable to have Dr. Geddings return to the United States *via* India, where he could personally observe the plague and investigate the risk to our Pacific coast cities.

THE *LANCET* RELIEF FUND.

We had supposed that the fund had only recently been established, but in the *Lancet* for February 6th we read that it has been in operation since 1889, that during the eight years of its existence three hundred and fifty-five applications have been made by medical men or their widows for relief, and that in some cases "the assistance afforded has been the means of enabling the recipients to make a fresh and fair start in life." The work is most creditable to our contemporary.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 16, 1897:

DISEASES.	Week ending Feb. 9.		Week ending Feb. 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	12	4	11	3
Scarlet fever	160	8	160	6
Cerebro-spinal meningitis	1	1	5	6
Measles	164	3	173	4
Diphtheria	228	40	212	46
Croup	15	5	7	7
Tuberculosis	138	135	199	126

The Bill to Regulate the Practice of Optometry in the State of New York.—Dr. F. W. Marlow, of Syracuse, as chairman of a committee appointed by the Syracuse Academy of Medicine to oppose the bill, recently submitted to the assembly committee on general laws a protest of which the following is the substance:

"This bill is opposed on the following grounds:

"Its enactment into law would be in direct opposition to modern tendencies. Modern refraction work is a growth of the second half of this century—one chapter in the book of general medical progress.

"Glasses were invented six hundred years ago, and their adaptation remained in the hands of the opticians until within fifty years, when the subject was taken up by physicians. Glasses then were used only to assist the sigh of those whose eyes had failed from age or who were near-sighted, and physicians and even oculists at that time sen their patients to opticians to get glasses for these defects. Physiological optics was then in its early infancy—astigmatism was a curiosity. The fact that refractive error even of high degree could remain completely latent, unless medical treatment was used to unmask them, was entirel unknown. At that time, therefore, the work of the optician in choosing a pair of glasses was a comparatively simple matter, to be governed and decided by the patient's own ideas of correctness of vision and comfort.

"But modern medical science has vastly widened this field. It has shown, in the first place, that myopia, or common nearsightedness, is a disease, just as Bright's disease is a disease, progressive in its character, resulting from congenital anomalies, other diseases, and unhygienic conditions of work, and leading to secondary disease of the eyes and in many cases to blindness.

"It has demonstrated the nature and prevalence of astigmatism and its importance. It has shown the existence of anomalies of the balance of the ocular muscles, existing with, sometimes as the cause or effect of, refractive errors, and modifying the symptoms produced by them.

"It has shown that many inflammations and functional disturbances of the eyes which require medical and surgical treatment are due to the existence of latent refractive errors which can not be detected by purely mechanical means; that in many cases eye symptoms are the result, in part, of impairment of the general health, the treatment of which is just as important as the correction of the local error, and oftentimes more so; that in many cases serious nervous symptoms have been shown to be, at any rate in part, due to certain anomalies of the eyes, such as headache, vertigo, insomnia, and all the symptoms which can be included under the term neurasthenia. That these are cases for the physician, and not for the mechanician, seems to be a self-evident proposition.

"That any one who undertakes the treatment of any of these cases in any way whatever is practising medicine, and that this bill would therefore constitute an infringement of the existing medical laws, can scarcely be doubted.

"The bill does more than this, however. Section XV, by implication, provides that no physician registering after he passage of this bill shall be permitted to fit glasses to he eyes by mechanical means, unless he obtains the license provided for by this bill.

"It is not contended that the possession of an M. D. degree confers upon any one knowledge, wisdom, or experince, but it is contended that the medical training which ies behind that degree should be the minimum requirement rom any person who desires to practise the most intricate f medical specialties.

"The bill confers the right to do work by mechanical means only. There are many cases in which the amount f refractive error can not be measured by mechanical means alone. Medical treatment is necessary to render manifest the total amount of error, correction of which in many cases is essential in order to obtain the desired relief rom symptoms.

"In fact, in enacting this bill into law, the State will ut itself and those to whom it grants these certificates into he false position of undertaking work which can not be roperly done under the conditions prescribed by the bill.

"One point more. There have arisen within the past w years, in this and other States, what are called optical olleges or institutes. Some of them are connected with anufacturing optical firms, and make no charge for inruction Thus the Spencer Optical Institute of the Spenr Optical Company advertises a course of tuition of one onth's duration without charge. The 'graduate' is, hower, we believe, expected to purchase a case of trial lenses the firm, and to send his prescriptions there to be filled. hers are independent. The Philadelphia Optical College vertises instruction by correspondence, and employs a n upon whom it has conferred its own degree of 'doctor refraction,' to do the work. During the present week a *ree days' course of instruction* is being conducted in the y of Syracuse. These are the sources from which emates the so-called 'graduate optician,' who is now in idence everywhere. It is, we fear, to legalize the standg of this class of opticians that this bill has been intro ced into the legislature.

"The Syracuse Academy of Medicine is emphatically posed to the passage of this bill, because it is contrary to dern tendencies, an infringement of existing medical vs, inimical to the public welfare, and a grave injustice the medical profession."

The American Medical Association.—The committee of arrangements for the fiftieth meeting, to be held in Philadelphia on June 1, 2, 3, and 4, 1897, announces that, in addition to the regular order of exercises during the meeting of the association, there will be for a week preceding and a week succeeding the association meeting special courses and clinics given in the various large teaching institutions of Philadelphia, without cost to visiting physicians. This course has been organized in response to a generally expressed wish that opportunities might be given to visiting physicians of taking clinical courses, for it is believed that many physicians from distant points would be glad to spend a week or two in this manner over and above the time occupied by the meeting. A schedule and roster describing the course in detail will be published shortly before the meeting. Further information may be obtained from Dr. Edward Martin, No. 415 South Fifteenth Street, Philadelphia, the chairman of the committee on hospital courses.

The Brooklyn Medical Society.—At the annual meeting, on Friday, January 15th, the following officers were elected: President, Dr. F. G. Winter; vice-president, Dr. Peter Scott; secretary, Dr. B. F. M. Blake; corresponding secretary, Dr. J. H. Droge; treasurer, Dr. L. E. Meeker; and librarian, Dr. Edwin A. Hatch.

At the last regular meeting, on Friday evening, the 19th inst., the programme included the following papers: How Hypnotism is Taught at Nancy, by Dr. J. F. Kent; Ulnar-Nerve Degeneration following Injury, by Dr. John C. Caldwell; Removal of the Clavicle, by Dr. H. B. De Latour; and Appendicitis Treated by Operation, by Dr. F. G. Winter.

The St. Louis Medical Society.—At the last regular meeting, on Saturday evening, the 13th inst., Dr. G. M. Phillips was to read a paper entitled When to Begin the Specific Treatment of Syphilis, which was to be discussed by Dr. Bransford Lewis, Dr. A. H. Ohmann-Dumesnil, Dr. Joseph Grindon, Dr. M. F. Engman, Dr. J. H. Duncan, and Dr. J. T. Jelks. Dr. T. F. Prewitt was to report a case of tubal pregnancy occurring twice in the same Falloppian tube, and exhibit a specimen.

The Buffalo Academy of Medicine.—At the next meeting of the Section in Obstetrics and Gynæcology, on Tuesday evening, the 23d inst., the following papers will be read: Drainage following Abdominal Operations, by Dr. Chauncey Smith; and The Treatment of Shock and Collapse following Operations, by Dr. John Parmenter.

At the last meeting of the Section in Pathology, on Tuesday evening, the 16th inst., the programme included two papers entitled The Cultivation of Gonococci and Exhibition of Culture, by Dr. F. S. Busch; and The Workings of the Bureau of Animal Industry at East Buffalo, by Dr. N. P. Hinckly.

The German Medical Society of the City of New York.—The society has recently issued a little volume containing a memoir of the late Dr. Carl Heitzmann, by Dr. Leonard Weber, with an excellent portrait of Dr. Heitzmann, lists of honorary, corresponding, and active members, former presidents, and present officers, and the by-laws.

The Society of Alumni of Bellevue Hospital held a reunion and dinner at the Waldorf on Thursday evening, the 11th inst.

St. Mark's Hospital.—Dr. Andrew von Grimm has been appointed an attending physician to the hospital.

Changes of Address.—Dr. J. W. Chapin, from Hot Springs, Virginia, to Biltmore, North Carolina (until May 15th), to Pomfret, Connecticut, for the summer; Dr. D. H. Wiesner, to No. 456 Lexington Avenue, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 7 to February 13, 1897:*

GODFREY, GUY C. M., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort D. A. Russell, Wyoming, and ordered to Fort Sheridan, Illinois, for duty.

Merrill, James C., Major and Surgeon, will be relieved from duty at Fort Sherman, Idaho, upon the arrival of Skinner, G. A., First Lieutenant and Assistant Surgeon, and ordered to report to the surgeon general for duty.

Purviance, William E., First Lieutenant and Assistant Surgeon, will proceed from Fort Columbus, N. Y., to Washington, D. C., and report for examination as to his fitness for promotion.

Winter, Francis A., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Grant, Arizona, and ordered to Washington, D. C., for examination as to his fitness for promotion.

The following-named medical officers will be relieved from duty at the Army Medical School, Washington, D. C., upon completion of the course about March 12, 1897, and ordered to take station as follows:

Cloud, Marshall M., First Lieutenant and Assistant Surgeon, Fort Sill, Oklahoma Territory.

Darnall, Carl R., First Lieutenant and Assistant Surgeon, Fort Clark, Texas.

Dutcher, Basil H., First Lieutenant and Assistant Surgeon, Fort Leavenworth, Kansas.

Fuller, Leigh A., First Lieutenant and Assistant Surgeon, Fort Meade, South Dakota.

Kemp, Franklin M., First Lieutenant and Assistant Surgeon, Vancouver Barracks, Washington.

Richards, William E., First Lieutenant and Assistant Surgeon, Fort Grant, Arizona.

Skinner, George A., First Lieutenant and Assistant Surgeon, Fort Sherman, Idaho.

Smith, Louis P., First Lieutenant and Assistant Surgeon, Fort D. A. Russell, Wyoming.

Society Meetings for the Coming Week:

Monday, *February 22d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Neurological Society of Philadelphia; Baltimore Medical Association.

Tuesday, *February 23d:* New York Dermatological Society (private); Metropolitan Medical Society, New York (private); College of Physicians of Philadelphia (Section in General Medicine); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Richmond, Virginia, Academy of Medicine and Surgery.

Wednesday, *February 24th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

Thursday, *February 25th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Massachusetts, Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *February 26th:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Northern Medical Association of Philadelphia; Philadelphia Laryngological Society.

Saturday, *February 27th:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths

Married

Crawford—Duhain.—In New York, on Wednesday, February 10th, Dr. William H. Crawford and Miss Marie Hortense Duhain.

Givin—Hovey.—In Brookline, Massachusetts, on Thursday, February 4th, Dr. Robert C. Givin and Miss Edith G. Hovey.

Grant—Sheehan.—In Saratoga, N. Y., on Tuesday, February 9th, Dr. Charles S. Grant and Miss Lizzie C. Sheehan.

Gresham—Beckham.—In Privateer, South Carolina, on Wednesday, February 10th, the Rev. G. T. Gresham and Miss Mabelle Beckham, daughter of Dr. F. M. Beckham.

Larkin—Bankston.—In Amite City, Louisiana, on Wednesday, February 10th, Dr. Buford Larkin, of Oakvale, Mississippi, and Miss Loùisa C. Bankston.

Van Rensselaer—Coffin.—In New Brighton, N. Y., on Wednesday, February 10th, Mr. Lindsay Van Rensselaer, son of Dr. John J. Van Rensselaer, and Miss Lolita Coffin.

Died.

Baldwin.—In New Brunswick, New Jersey, on Sunday, February 14th, Dr. A. Van Nest Baldwin, in the thirty-ninth year of his age.

Blanchard.—In Boston, on Wednesday, February 10th, Dr. Henry Blanchard, in the eighty-fifth year of his age.

Brievogelle.—In New York, on Saturday, February 13th, Dr. Eugene Z. Brievogelle, in the forty-ninth year of his age.

Fuller.—In Brooklyn, on Friday, February 12th, Dr. Philip Hastings Fuller.

Hartshorne.—In Tokio, Japan, on Wednesday, February 10th, Dr. Henry Hartshorne, of Philadelphia, in the seventy-third year of his age.

Henshaw.—In Cambridge, Massachusetts, on Tuesday, February 9th, Grace Raymond, wife of Dr. George Bridges Henshaw.

McNulty.—In Boston, on Wednesday, February 10th, Henry J. McNulty, son of Dr. Frederick J. McNulty.

Pinckard.—In Chicago, on Wednesday, February 10th, Mrs. C. P. Pinckard, wife of Dr. Charles P. Pinckard.

Swinburne.—In New York, on Sunday, February 14th, Dr. Ralph E. Swinburne, aged forty-three years.

Wait.—In Troy, N. Y., on Sunday, February 7th, Dr. Sheridan Paul Wait, in the thirty-eighth year of his age.

Letters to the Editor.

AN INJECTION FOR GONORRHŒA.

Buffalo, N. Y., *January 27, 1897.*

To the Editor of the New York Medical Journal:

Sir: The best of all remedial injections I have ever used in (gonorrhœa) urethritis, chronic or acute, is the following:

℞ Antipyrin 10.0;
Tinct. ferri chlor .... 10.0.
Trit. bene et adde
Aquæ dest. .... q. s. ad 150–250.0.

I have seen no ill effects whatever following the us of this combination. In sixty cases I have had occasion to use it with the best success in every respect. It seem to be non-irritating, at the same time highly antisepti and astringent. At first I used it alternating with ichthyol and argonin, but have abandoned the use of bot in favor of the ferropyrine.

J. G. Möhlau, M. D.,
Clinical Instructor in Genito-urinary Diseases, Uni versity of Buffalo.

N. B.—I use a six-ounce syringe (Ultzmann) with Mercier (*coudé*) catheter, which I insert as far as th prostatic urethra; inject after having cleaned the ur thra with six to twelve ounces of boiled water. I nex inject three to four syringefuls, so that about six ounces enter the bladder, in order to prevent cystitis. It all passes out alongside of the catheter.

Book Notices.

The Cell in Development and Inheritance. By EDMUND B. WILSON, Ph. D., Professor of Invertebrate Zoölogy, Columbia University. New York and London: The Macmillan Company, 1896. Pp. xvi–371. [Price, $3.]

NEARLY sixty years ago Schleiden and Schwann enunciated the cell theory. Since then many gifted and assiduous biologists have striven without success to demonstrate the probable relationship between the evolution theory and this cell basis of all life and organic development. Numerous shifting hypotheses, advanced to explain the inherent power of active adjustment between even the simplest organism and its environment, have become prominent; but all fail of their purpose and leave the fundamental problems of biology unsolved. Wilson's book is a well-prepared compilation of the principal theories and facts of the anatomy, physiology, and all-important vital functions of cells. Yet, in summing up, he admits that "we are utterly ignorant of the manner in which the *idioplasm* of the germ cell can so respond to the play of physical forces upon it as to call forth an adaptive variation." [*Idioplasm* (or *chromatin*) is that particular portion of the protoplasm within the cell that Naegeli theoretically regarded as forming the physical basis of heredity.]

The germ cell is immortal. We must admit with Huxley that the formative and perpetuative energy of the germ does not come from without, but rather inheres in the egg and is thus derived from its ancestor, of which it of necessity was originally a part, even as it exists in its descendants. Yet we can understand merely the precise external aspects of inheritance and development, as manifested by cell division (mitosis) and differentiation. Further than this nothing is known. The inmost structure of the cell and the inner means by which latent adult characters are developmentally produced from this germ of the future organism are as yet incomprehensible.

Even the most complex plants and animals are all composed of cells. However diversified the parts of the body, the microscope reveals that they are formed by combinations of these elementary organic units, possessng a characteristic type of organization common to all ells. Virchow published, in 1855 and 1858, the fundamental fact, now universally accepted, that cells could rise only from division of pre-existing cells. "*Omnis ellula e cellula.*" "When a cell divides into two parts, each f these forms a perfect cell, and they, like their successrs, carry on the endless process so long as they grow and erpetuate their species, the germ cells living on in their escendants, while the individual body dies. Although Harvey seemed to approach this modern view, he yet elieved, with the ancients, in the possibility of sponaneous origin of life.

With the possible exception of certain of the lowest, ingle-celled forms of life, such as bacteria, the complex rotein substance composing the cell contains a smaller, assive body, the *nucleus*, and within this there may be a still smaller passive body, the *nucleolus* (or even several of these may be visible). Almost always, too, the cell contains granular, pigmentary, and other lifeless foreign or excretory bodies sometimes classed as *metaplasm* and devoid of the vital properties of the living protoplasm. The cell wall, when there is one, is to be regarded as usually a lifeless product of the protoplasm. Although it has been elaborately studied, the physical configuration of the interior cellular and nuclear network is not absolutely determined. A fragment of cell protoplasm sooner or later dies if deprived of its nucleus, being incapable of repair, growth, or increase. Hence the nucleus is viewed as the important factor of cell activity and perpetuation. The essential element of the nuclear substance is *chromatin* or *nuclein*, composed of albumin and the complex nucleic acid, rich in phosphorus. The nucleic acid has a strong affinity for the basic aniline dyes; hence the nuclei are best stained by means of such reagents as methyl green, safranine, or Bismarck brown. Hæmatoxylin is also very good.

In generation, an immense spheroidal cell, the *ovum*, and an exceedingly minute but complete cell, the normally solitary fertilizing spermatozooid, are absolutely essential. In the latter, the main portion of the "head" is formed by its nucleus, the vehicle of inheritance. Close to this nucleus is a very minute body called the *centrosome*, which is introduced with it into the ovum and contributes to the fertilization of the egg by imparting to it the power of cell division, lacking in the unimpregnated (non-parthenogenic) ovum. The "tail" of the spermatozooid is of service merely as a locomotor organ like an ordinary cilium, and is structurally and physiologically similar to muscular fibre. In case a membrane surrounds the ovum before fertilization, one or more openings, called *micropyles*, exist in it to facilitate the entrance of the spermatozooid. Of the envelopes of the egg, the vitelline membrane alone is produced by the ovum itself. The chorion is formed by the maternal follicle cells, outside the ovum. Other and accessory envelopes are produced by the maternal structures. The ovum contains in its abundant protoplasm a large nucleus, within which is a prominent nucleolus (together, in some varieties, with several smaller ones). It is not by inherent predisposition of the germ cells, but rather by the effect of external conditions, that the sex of the product of the fecundated ovum is determined. Higher temperature and higher feeding seem from experiments to induce a preponderance of females, and the reverse conditions males.

Of the theories of development and heredity, the familiar evolutionary one of Wilhelm Roux and Weismann, while logically strong, is combated by Wilson, who calls it metaphysical and unscientific. Although not actually overturned by an appeal to fact, that renders it very weak and wholly lacking in confirmation. The author modestly mentions his own experiments to confirm the refutation. With Driesch and Hertwig, he regards all the nuclei as equivalent, and equally containing the same idioplasm distributed by the division which produced their cells and causes the egg protoplasm to undergo specific and progressive complex changes. With Roux and Weismann, he agrees that a specification of the nucleus results from differentiation which is indirectly conditioned by chemical and other conditions of the environment. Yet the inevitable direct inheritance results under normal conditions. A fish results from the egg of a fish, and a polyp from the egg of a polyp, though these germs lie side by side constantly in the same water.

An excellent glossary of cytological terms is appended, together with a full literature list and good indices of authors and of subjects. The text is remarkably free from errors, and the presswork (Norwood) is excellent.

Anomalies and Curiosities of Medicine. Being an Encyclopædic Collection of Rare and Extraordinary Cases, and of the most Striking Instances of Abnormity in all Branches of Medicine and Surgery, derived from an Exhaustive Research of Medical Literature from its Origin to the Present Day, Abstracted, Classified, Annotated, and Indexed. By George M. Gould, A. M., M. D., and Walter L. Pyle, A. M., M. D. With Two Hundred and Ninety-five Illustrations in the Text, and Twelve Half-tone and Colored Plates. Philadelphia: W. B. Saunders, 1897. Pp. 968. [Price, $6.]

"In view of all this" [the great interest always manifested in the abnormal and the curious], says the preface, "it seems itself a curious fact that there has never been any systematic gathering of medical curiosities. It would have been most natural that numerous encyclopædias should spring into existence in response to such a persistently dominant interest. The forelying volume appears to be the first thorough attempt to classify and epitomize the literature of this nature. It has been our purpose to briefly summarize and to arrange in order the records of the most curious, bizarre, and abnormal cases that are found in medical literature of all ages and all languages—a *thaumatographia medica.*"

It rarely happens in modern literature—not medical literature only—that a field so unoccupied offers itself to the writer, and when we consider this fact and the importance of the subject we are surprised indeed. The paucity of systematic works upon the subject, however, is no longer to be regretted, since in this work of Dr. Gould's and Dr. Pyle's we now have one which more than compensates for the deficiency. Indeed, it is rather a matter of congratulation that the condition should be as it is, and we would gladly exchange a multitude of the relatively useless works which but encumber almost all the branches of medicine for one so comprehensive, so exhaustive, so able, and so remarkable in its field as this. The importance of such a book is, indeed, not to be overestimated, for surely a record of the abnormal is no mere collection for the gratification of idle and morbid curiosity, no "freak" picture book to be carelessly glanced through and shortly cast aside. The reading of such a book is instructive and absorbing, but it is as a reference book for preservation and consultation that it becomes so valuable. The bearings which such a record may have upon matters of almost daily occurrence in medicine is, we venture to say, but too little appreciated; in medico-legal matters alone its usefulness is self-evident, while in matters of medical and surgical practice it is little less so. Surely such a work will be no mere satisfaction to those inclined to curiosity, but an aid and a help to every medical man.

Not the least of its valuable features is the excellent classification of the work, a classification at once simple and logical. Chapter I deals with genetic abnormities, such as menstrual variations and aberrations of conception and gestation. Chapter II considers prenatal anomalies, and Chapter III those of an obstetrical nature, while prolificity is detailed in Chapter IV. Chapters V and VI present major and minor terata respectively, and from out-and-out monstrosities to anomalies of the seminal vesicles the list is long and exhaustive. Chapter VII deals with anomalies of stature, size, and development, Chapter VIII with longevity, and Chapter IX with physiological and functional aberrations. In Chapters X, XI, XII, XIII, and XIV the various surgical anomalies are presented, classed as they occur in the head and neck, the extremities, the thorax and abdomen, the genito-urinary organs, and other parts. A very important section is Chapter XV, in which are described anomalous types of disease, while of little less interest and importance is the eighteenth chapter, upon historic epidemics. Anomalous skin diseases occupy Chapter XVI, and anomalous nervous and mental diseases Chapter XVII. A bibliographical index of unusual merit is added, and the general index, too, is excellent.

The publisher's work can not be too highly spoken of. In paper and print, and, above all, in well-executed and plenteous illustrations, the book is most admirable; and these features, harmonizing with the unusually meritorious text, go to make a very excellent result. We are warm in our congratulations to the authors and the publisher of this work.

In the preface we note the following: "As we contemplate constantly increasing our data, we shall be glad to receive information of any unpublished anomalous or curious cases, either of the past or in the future," and again: "If, despite this" [editorial care], "omissions and errors are to be found, we shall be grateful to have them pointed out."

Autoscopy of the Larynx and the Trachea. (Direct examination without mirror.) By Alfred Kirstein, M. D., of Berlin. Authorized Translation (altered, enlarged, and revised by the author) by Max Thorner, A. M., M. D., Professor of Clinical Laryngology and Otology, Cincinnati College of Medicine and Surgery, etc. With Twelve Illustrations. Philadelphia: The F. A. Davis Co., 1897. Pp. x–68. [Price, 75 cents.]

By the term "autoscopy of the air-passages" the author means the direct linear inspection, through the mouth, of the lower pharynx, the larynx, the trachea, and the entrances into the primary bronchi.

This is a notable departure from our present method of procedure, by means of the laryngoscope, and, as such, deserves our attention and consideration. Dr. Kirstein published in 1895 several articles on this subject, which are probably well known to such of our readers as are interested in laryngological work. The present little volume is a reiteration and elaboration of his views as there set forth. "Autoscopy," says the author, "is veritably a surgical method; it exposes the larynx in the depth of the throat, with a speculum, in about the same way as the portio vaginalis uteri is exposed by the distention of the vagina."

The necessary conditions for a complete linear inspection are twofold—namely, the position of the body o the patient, so that an imaginary continuation of th laryngo-tracheal tube would fall within the mouth; an secondly, depression of the epiglottis and base of th tongue as objects which obstruct the imaginary straigh line.

The first of these conditions is obtained by tilting th head of the patient upward until the axis of vision form an angle of about one hundred and thirty-five degree with that of the trunk. The base of the tongue is force forward and downward by means of a spatula, whic must be applied behind the circumvallate papillæ at the root of the tongue.

For purposes of illumination, the author recommends the use of the electric head-lantern, which leaves the observer unimpeded in his movements. He has constructed a forehead-lamp for reflected light in which the rays collected by a convex lens are deflected at a right angle (after passing through the lens) by a small plane mirror placed at an angle of forty-five degrees to it. This mirror is perforated obliquely through its centre for the eye of the observer.

The author has also ingeniously modified Casper's urethral electroscope, so that this instrument (which he calls the "autoscope") may be applied to his method of examination of the larynx.

For a more comprehensive idea of the procedure, instruments, etc., in acquiring the "difficult art" of autoscopy, we would refer the reader to this interesting ittle book. Certainly this method of examination of the iir passages deserves careful study and trial, as its advantages are numerous. Its discovery has in reality eniched our theoretical knowledge and afforded us a more ractical means of carrying out intralaryngeal operations n many cases. "The weakness of autoscopy," says the uthor, "lies in the limitation of its applicability; but vithin the field of its applicability it is, in almost every espect, superior to laryngoscopy." He considers that, specially in the examination of children, this method vill assume an important rôle, on an equal footing with aryngoscopy, and be preferred to the latter in cases of ery young children.

The author thus sums up the possibilities of his methd: "The human larynx and trachea can be examined utoscopically; that is, they are accessible to direct inpection; the means to this end is pressure on the tongue. he individual adaptability to autoscopy varies within ide limits. . . . Autoscopy is an important addition laryngoscopy, especially for examining the posterior all of the larynx and the trachea. In the examination children, autoscopy is indispensable in some cases; pecially with the aid of chloroform anæsthesia, it can carried out without any great difficulty. In endoryngeal and endotracheal surgery autoscopy will take e front rank as the standard method; of course within s anatomical limits." The book closes with an appenx and a few additional notes by the translator, giving e histories of two cases, and remarks on the latest imovements in the method.

eprosy and the Charity of the Church. By Rev. L. W. Mulhane. Chicago and New York: D. H. McBride & Co., 1896. Pp. 13 to 155. [Price, 75 cents.]

The Rev. L. W. Mulhane modestly claims no iginality for his little book, but says it is merely a comlation of facts (?) "picked up here and there," most which, appearing about a year ago in a pamphlet, used such an "unexpected demand" for this that the verend gentleman was induced to enlarge and revise and by adding some recent information to put it in ore enduring form. The field of his gleanings has en so wide, extending from the pages of fantastic imagngs of the disease in *Ben Hur* to the columns of the *ncinnati Commercial Gazette,* that we are sure the *sam* and *jetsam* "picked up here and there" between d including these reliable limits, will more than satis the "demands" of at least most of his readers.

In the chapter on The Menace of Leprosy there are some nuggets of information to be mined from its fourteen pages. We are told in it that a terrible and constantly increasing danger menaces the lives of thousands, if not hundreds of thousands, of people in the United States. A horrible lingering, living death is now face to face with the Americans, and unless stern and determined measures are taken by the boards of health we may within a few years be placed in the position of India, which to-day has a leper population close upon one hundred and thirty-two thousand. "The disease," the author goes on to say, or rather quote from the columns of the *Cincinnati Commercial Gazette,* so "replete with information," "is now right here among us, and, if a close scrutiny is not kept by our foreign consuls on the invoices of goods sent from places where lepers abound, the contagion may be spread here to the same extent that it was in Europe in the twelfth century, when there were no fewer than twenty thousand lazar houses on that Continent and two thousand in France alone!" What a delectable dish for the shuddering mind with a penny-dreadful appetite! Further along (speaking for himself this time), after citing the fate of Father Damien, he says: "We are, however, in as great danger from food and merchandise exported to this country from localities where leprous bacilli have practically taken possession of communities favorable to its spread. Sugar, bananas, and the like, that have been handled by leprous West Indian negroes, we can not protect ourselves against unless our consular representatives keep strict watch and warn this government of the danger in time. They should be imperatively instructed to refuse their consular certificates and signatures for any goods proposed to be imported to this country from such localities." Now back to quotation marks: "If, however, these precautions are not immediately carried into effect, Dr. Pitkin, of Ohio, does not hesitate to assert that we may have within the next ten years at least two hundred and fifty thousand to five hundred thousand lepers included among the inhabitants of the United States." And more, *ad lib., ad naus.*

In Part II, treating of The Charity of the Church to the Victims of Leprosy, to which subject the writer would have done well to confine himself, some interesting details in the life of Father Damien are given.

Artificial Anæsthesia. A Manual of Anæsthetic Agents and their Employment in the Treatment of Disease. By Laurence Turnbull, M. D., Ph. G., Aural Surgeon to the Jefferson Medical College Hospital, Philadelphia, etc. Fourth Edition, revised and enlarged. With Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. xxiv–25 to 550. [Price, $2.50.]

The additions made to the number of anæsthetic remedies within the last six years have not been inconsiderable, and, though, it is true, they have not all been invaluable, many of them, especially those concerned in the production of local anæsthesia, are not without importance. The fourth edition of Dr. Turnbull's work has therefore had to be enlarged considerably as compared with the third, for completeness has ever been the aim of this work. This quality is manifested in the repetition of all the essential features of the third edition, together with a very excellent consideration of the new anæsthetics.

The writer again accentuates his belief in ether as the ideal anæsthetic, and expresses skepticism as to the proof adduced to show that its powers for ill are not wanting. We unite with the author and with the large majority of observers in thinking ether the most valuable and the least dangerous of general anæsthetics, but we are far from rating it as an innocent drug.

A singular blunder in the preface to the fourth edition chronicles "the discovery and introduction of ether" as having occurred on October 6, 1846. It would be hypercritical indeed to call attention to this (since it is clearly an accident of composition only) were it not that too few realize that ether was discovered early in the sixteenth century, and that it is only its application as an anæsthetic which concerns the fifth decade of the present century. Incidentally, too, let us suggest that the various prefaces which the present edition contains are, from a literary standpoint, decidedly open to criticism and constitute a not altogether pleasant introduction to a work whose better acquaintance may be in many ways of great advantage to the reader.

BOOKS, ETC., RECEIVED.

A Brief Note upon a Perfected Series of Test Words intended for the Determination and Estimation of the Power of Accommodation. By Charles A. Oliver, M. D., Philadelphia. [Reprinted from the *Archives of Ophthalmology.*]

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Volume X. Diseases of the Nervous System. New York: William Wood and Company, 1897. Pp. 3 to 859.

Swedish Movements or Medical Gymnastics. By Dr. T. J. Hartelius, Director of the Central Gymnastic Institute of Stockholm, Sweden, etc. Translated by A. B. Olsen, M. D. With Introduction and Notes by J. H. Kellogg, M. D., Member of the American Medical Association, etc. Battle Creek, Michigan: The Modern Medicine Publishing Co., 1897. Pp. vii–3 to 162. [Price, $1.50.]

The Prevention of Cruelty to Animals in the District of Columbia. A Memorial from a Joint Committee of the Medical and other Scientific Societies and Educational Institutions of the District of Columbia, protesting against the Proposed Legislation Embodied in Senate Bill 1552, entitled "A Bill for the Further Prevention of Cruelty to Animals in the District of Columbia," and presenting their Views of the Same. Fifty-fourth Congress, Second Session, Document No. 31.

Transactions of the American Ophthalmological Society. Thirty-second Annual Meeting, New London, Connecticut, 1896.

Twenty-ninth Annual Report of the New York Orthopædic Dispensary and Hospital. From October 1, 1895, to October 1, 1896.

Fifteenth Annual Report of the Hospital for Women and Children, Newark, N. J. December, 1896.

Report of the Freedmen's Hospital to the Secretary of the Interior, 1896.

Deformities of the Nasal Sæptum. By J. H. McCassy, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Analysis of the Gastric Contents, with Special Reference to Hydrochloric Acid and the Ferments of the Stomach. By Leon L. Solomon, M. D., Louisville. [Reprinted from the *American Practitioner and News.*]

Gonorrhœal Iritis and Non-suppurative Gonorrhœal Conjunctivitis, and their Pathology. By William Cheatham, M. D., Louisville. [Reprinted from the *Archives of Ophthalmology.*]

Gonorrhœa in the Puerperium. By Albert H. Burr, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

Gonorrhœa, its Ravages and its Prophylaxis. By Albert H. Burr, M. D. [Reprinted from the *Chicago Medical Record.*]

Infantile Scorbutus. By Albert H. Burr, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Erb's Primary Muscular Atrophy. By Elmore S. Pettyjohn, M. D., Alma, Michigan. [Reprinted from the *Journal of the American Medical Association.*]

The Treatment of Syphilis. By L. Bolton Bangs, M. D. [Reprinted from *International Clinics.*]

Miscellany.

Prolapsus Uteri, with Special Reference to its Radical Treatment in Aged Women.—The following is a abstract of a paper presented before the recent meetin of the Medical Society of the State of New York by D Andrew F. Currier, of New York:

This subject is not put forward as a novel one; i has been considered for ages, with varying success as t its theoretical and practical treatment. Comparativel little attention has been given to the phase which is her considered. The question comprehends not only th treatment of the aged, with their atrophic tissues, bu those who are near the menopause, and even youn women with whom prolapse is irremediable by ordinar measures.

Permanent cure is frequently accomplished by th use of such operations as stop short of the removal the uterus. The lesions in question are essentially co nected with gestation; few cases occur in nullipar The uterus is not immovably held by the so-called lig ments, but is poised, and displacements occur when t ligaments and supports are inefficient. The utero-sacr ligaments have an important poising function, yieldi with the changes in the position of the uterus, but t mobility of the uterus is probably not so extensive is sometimes asserted. The chief support of the uter is the vagina and its firm pelvic attachments, the uter sacral ligaments offer less support, and the bladder giv the least support of all.

If after the distention by parturition of all the tissu in the parturient canal the subsequent contraction deficient, an excess of intra-abdominal pressure (as straining, vomiting, or falling) forces the uterus do upon the vagina, the resistance of the latter being gre ly diminished, the vagina will be everted like the fing of a glove, and the uterus, acting like a wedge, will f low the axis of the pelvis downward and outward un it is out of reach of the propelling force. The blad and rectum are dragged downward in some cases; in o ers they are peeled away, and a loop of intestine m occupy the hernial pouch of the vagina.

The universal symptom with prolapsus is discomf from which the patient can never entirely rid hers If the bladder and rectum have descended, the effici emptying of those organs becomes impossible, and thartics and diuretics are constantly required.

Numerous cases have been reported in which tr blesome cystitis has resulted, followed by lesions of the ureters and kidneys, the final termination being a fatal one. In other cases vesical calculi have formed. Hernia of the intestine may occur, with the serious consequences which are possible with such an accident. Bruising and ulceration of the os uteri are very frequent, and are probably the foundation of malignant disease in some cases.

Atresia of the uterus may result, with the formation of a tumor as the retained secretions accumulate. Œdema of the tissues, especially of the cervix, is also possible, with serious consequences.

The earliest method of treatment consisted in plugging the vagina with a glass ball, which almost always auses pain and ulceration if it exerts the requisite pressure. Pessaries, cups, straps, and other mechanical devices are usually imperfect means of support. Many operative measures have been proposed—the complete occlusion of the entrance to the vagina, the formation of a sæptum dividing the vagina into two distinct tubes Le Fort), various plastic operations (Braun, Hegar, Emmet, Martin, Schröder), amputation of the cervix, hortening of the round ligaments (Alexander), enircling the vagina with buried wire sutures (Freund), he free use of the actual cautery (Byrne), the passage of igatures through the uterus and vagina (Schücking), bdominal section, dragging the uterus back and securng it in the abdomen, and, finally, the method which s recommended by the writer and others—extirpation f the uterus *per vaginam*, and the removal of a suffiiency of redundant vaginal tissue.

This operation has already given satisfaction in a onsiderable number of recorded cases. Its indications re as follows:

1. Such a condition of the atrophic and hypertrohied tissues as would render firm union by plastic operaons problematical.

2. Disease of the uterus and annexa which renders hem a menace to life and health.

3. A condition in which there is the maximum of scomfort, especially if the patient is prevented thereby om earning her living.

Even extreme age is seldom a contra-indication to the eration; the writer's most satisfactory case was in a oman of seventy-one.

The operation is sometimes simple and easy, and netimes very difficult, especially in cases in which the ssection is troublesome and the passive hæmorrhage stinate. The risk of wounding the bladder and rectum greater than in vaginal hysterectomy under the ordiry conditions, but one prepares deliberately for the k. After the removal of the uterus the stumps of the oad ligaments should be stitched to the vagina to favor raction of the latter. Redundant tissue may be cut ay from the vagina when the uterus is removed or sequently, according to the indications. The shock the operation is usually inconsiderable, and the mority should be *nil* except in cases in which there are uliar and unlooked-for complications. Five cases ve occurred, in the past two years, in the writer's ctice; one was fatal, but in that case serious disease the kidneys was probable; an autopsy could not be ured. In the other cases the results have been satistory so far as has been ascertained. The method is ommended with confidence when compared with all er measures for the relief of prolapsus uteri.

The Left Infero-dorsal Sonorous Zone.—At a recent ting of the Société médicale des hôpitaux, a report of which is published in the *Gazette hebdomadaire de médecine et de chirurgie* for January 14th, M. L. Galliard stated that there existed at the base of the thorax, to the left and behind, a horizontal zone extending from the last dorsal vertebræ to a point beneath the axilla; it was limited below by a horizontal line, and above by a line, at first horizontal, then ascending obliquely; it was higher, consequently, at the side of the chest than in the neighborhood of the spinal column, where its height scarcely exceeded the width of three fingers. This infero-dorsal sonorous zone was subject to variations due to the influence of gaseous distention of the stomach and of the colon.

If the left lung, compressed by these distended organs, had been previously healthy, the infero-dorsal zone would give a peculiar tympanitic resonance which was different from that of the pulmonary parenchyma in the subjacent region.

If the left lung was hepatized, this tympanitic resonance would contrast with the dullness which the subjacent pneumonic mass gave.

If the left pleura contained gas and no liquid, the infero-dorsal zone would give an amphoric sound.

If the left pleura contained both liquid and gas, this zone would give a hydro-gaseous or a metallic sound.

If the left pleura contained liquid only, there would probably be found, under certain conditions, the same metallic sound.

Piorry, said M. Galliard, had ascertained it in a cadaver in a case of diaphragmatic pleurisy. In two cases in which the infero-dorsal tympanitic resonance had preceded the appearance of a metapneumonic empyema, the author had observed an alteration in the dullness which, he thought, might lead to an error on the part of an observer who was not acquainted with the conditions.

It was especially in regard to the treatment of pleurisy of the left side that it was important to study the percussion phenomena of the infero-dorsal zone.

The Internal Secretion of the Ovary.—The *Gazette médicale de Paris* for January 23d publishes the following conclusions reached by Curatulo (*Annali di ostetricia et ginecologia*, No. 10) in regard to this question: 1. The ablation of the ovaries exercises a considerable influence on metabolism. 2. The quantity of phosphates eliminated by the urine is notably diminished after removal of the ovaries. In reality, this diminution is not due to elimination, which is the same before and after the operation, or to the diminution of the absorbent power of the intestine, for the condition in which the gastro-intestinal tract is found is the same before as after the operation. 3. The curve of nitrogen, after ovariotomy, ascertained either by Kjeldahl's method or by Yvon's, presents a slight oscillation, without a very distinct tendency to elevation or to lowering. 4. After oophorectomy the quantity of carbonic acid eliminated by the respiration, and that of the oxygen absorbed, diminish considerably up to a certain limit, from which time it remains stationary. 5. In animals from which the ovaries have been removed the curve of the weight is progressively elevated until it attains considerable proportions from five to six months after the operation. 6. When a certain amount of ovarian juice is injected subcutaneously into sluts deprived of the ovaries the quantity of phosphates eliminated by the urine, which diminishes considerably soon after the operation, tends to increase and even to become superior to that which was ascertained before the operation; when still larger amounts are injected the quantity of phosphates increases in a very marked degree.

Hysterectomy performed in conjunction with oophorectomy does not seem to cause modifications other than those ascertained after simple removal of the ovaries.

The author closes his essay with the following theory: The ovaries, like other glands of the animal economy, have, according to Brown-Séquard's general doctrine, a special internal secretion. These glands continually throw into the blood a peculiar product, the chemical composition of which is completely unknown, and the essential properties of which tend to favor the oxidation of phosphorized organic substances, of carbohydrates, and of fatty substances.

It results therefrom that, when the function of the ovaries is suppressed, whether because oophorectomy has been practised or because these organs do not act, as is the case before puberty and after the menopause, there should be produced, on the one hand, a more considerable retention of organic phosphorus, whence there is a greater accumulation of calcareous salts in the bones, and, on the other hand, the very manifest corpulency which is ordinarily seen after oophorectomy or after the menopause.

The Pathology and Treatment of Chilblains.—Dr. A. E. Wright contributes a long article on this subject to the *Lancet* for January 20th, in which he shows that the very familiar form of serous hæmatoma known by the name of chilblain is dependent upon a condition of defective blood-coagulability and that it can often be relieved by increasing the patient's blood-coagulability. He states that he has investigated the conditions of blood-coagulability in ten cases of chilblains. Two of these were cases of aggravated chilblains occurring in adult men. The time required for blood-coagulation of these patients was respectively nine minutes, and nine minutes and a quarter. Four of these cases were cases of aggravated chilblains occurring in adult women. The duration of the blood-coagulation in these cases was respectively thirteen minutes, eleven minutes, eight minutes and three quarters, and seven minutes and a half. Lastly, four of these ten cases were mild cases of chilblains occurring in schoolboys. The duration of the coagulation in these cases was respectively eleven minutes, nine minutes and a quarter, seven minutes and three quarters, and four minutes and a half. It is obvious, therefore, says the author, when it is considered that the normal duration of blood-coagulation varies between three and four minutes, that all these cases of chilblains, with the exception of the last case, were associated with a very notable defect of blood-coagulability. This fact stands in relation with certain other facts which obtrude themselves more directly upon the clinician's attention. These facts are the greater liability of children to chilblains; the fact that chilblains are apt to occur in persons who give a history either of nose-bleeding or of urticaria; the occurrence of chilblains in persons who are characterized by a lymphatic habit of body; the not infrequent occurrence of chilblains in persons who are the subjects of malarial cachexia; and the not infrequent occurrence of chilblains in hæmophilic families.

The notorious liability of children to chilblains is, no doubt, says Dr. Wright, in part referable to the fact that the influence of cold makes itself felt more upon the relatively small extremities of the child than upon the relatively large extremities of the adult. Another probable factor in the ætiology is the fact that the lime salts upon which the coagulability of the blood depends are in the growing child being continually removed from the blood in order that they may be deposited in the bones.

There is an obvious relation between the predisposition to epistaxis, the predisposition to urticaria, and the predisposition to chilblains, inasmuch as these predispositions have been shown to depend upon a defect of blood-coagulability. Dr. Wright refers to two cases which recently came under his observation, in which he saw urticaria alternate with chilblains. Both these forms of serous hæmorrhage, he says, were apparently brought on in susceptible patients by exposure to cold.

The relation between the lymphatic constitution and a predisposition to chilblains, he continues, will be understood if it is considered, first, that the essence of the lymphatic constitution is to be found in a water-logging of the tissues which is dependent upon an excessive transudation of lymph; secondly, that it will require only a very slight increase of transudation to convert such a water-logged condition of the tissues into perfectly definite hæmatomata such as are seen in chilblains; and thirdly, that in all probability both chilblains and the water-logged condition of the tissues which are met with in the lymphatic patient are ultimately referable to a defect of blood-coagulability.

The subjects of malarial cachexia are not infrequently also the subjects of chilblains. Dr. Wright states that he was assured by a medical officer who had experience of the truth of the fact in his own person, that it was even possible to suffer from chilblains on the west coast of Africa after a severe attack of malarial fever. This liability of the malarious subject to chilblains, he continues, is in absolute conformity with the fact that the blood of patients who are the subjects of malarial cachexia is characterized by a defect of blood-coagulabilit which is dependent upon a great paucity of white blood-corpuscles, especially of multinuclear white blood-corpuscles.

Dr. Wright states that he has pointed out in previou papers that chilblains are of very frequent occurrenc in hæmophilic families; this, he says, corresponds wit the fact that hæmophilic blood is characterized by a extreme defect of blood-coagulability which is dependen upon an excessive and hereditary paucity of white blood corpuscles and, in particular, of multinuclear whit blood-corpuscles.

With regard to the treatment, he says, the obviou indication in a case of chilblains is to increase the pa tient's blood-coagulability, and in conformity with thes indications he places his patients upon a regimen of ca cium chloride, after duly cautioning them against low ering their blood-coagulability by the ingestion of sou fruits, alcohol, or excessive quantities of fluid. D Wright gives an account of eight cases, in six of whic the patients responded to this treatment with a marke increase of blood-coagulability. They were all complet ly cured as soon as a sufficient increase of coagulabili had been obtained. In one of the remaining cases n good whatever resulted from the treatment; owing, pe haps, says the author, to the maladjustment of the do of calcium chloride, no increase of coagulability was o tained. In the other case only transient and uncerta amelioration resulted, and in this case only a very tran tory increase of coagulability was obtained.

Dr. Wright points out that the importance of t observations which he records does not consist sol in the fact that calcium chloride has been shown to be a palliative of chilblains. It consists rather, he says, in he fact that these observations contribute to further es- ablish the principle that serous hæmorrhages are often lependent upon a defect of blood-coagulability, and that hey may be relieved or prevented in exactly the same vay as actual hæmorrhages can be, by increasing the oagulability of the blood.

The Western Ophthalmological, Otological, Laryngo- ogical, and Rhinological Association.—The second annual meeting will be held in St. Louis, on Thursday and Friday, April 8th and 9th, under the presidency of Dr. Adolf Alt, of St. Louis. The programme includes the ollowing titles: An Address of Welcome, by Dr. W. J. Langan, of St. Louis; the president's address—Hæmor- hagic Glaucoma, by Dr. Adolf Alt, of St. Louis; A Re- ort of Six Cases of Removal of Ossicles, by Dr. Norval I. Pierce, of Chicago; A Pyramidal and Senile Cata- act in one Subject, with a Report of a Case, by Dr. George F. Suker, of Toledo; A Case of Oculo-motor Pa- alysis, by Dr. George E. Bellows, of Kansas City; Ade- oid Vegetations, by Dr. Ellet Orrin Sisson, of Keokuk, owa; Some Observations on the Irritating Effects of atural Gas upon Trachoma, by Dr. John Johnson yle, of Marion, Indiana; The Treatment of Chronic uppuration of the Middle Ear, by Dr. S. S. Bishop, f Chicago; Astigmatism, by Dr. Dudley S. Reynolds, Louisville; Diseases of the Glosso-epiglottic Space, by r. J. F. Barnhill, of Indianapolis; The Classification of e Exudative Anginæ, by Dr. E. B. La Fevre, of Abi- ne, Kansas; Skin Grafting for Malignancy of the Orbit d Entropion, by Dr. Flavel B. Tiffany, of Kansas City; estoration of the Eyelids by Skin Grafting, by Dr. W. Tyree, of Kansas City; An Improved Skiascope, by r. J. Ellis Jennings, of St. Louis; Scopolamine as a ydriatic and Cycloplegic, by Dr. William S. Fowler, Chicago; Optic Neuritis, by Dr. F. C. Evans, of Louis- lle; A Report of a Case of Congenital Membranous taract with Aphakia, by Dr. A. S. Magee, of Topeka, ansas; Moderate Errors of Refraction: Shall we always rrect Them? by Dr. Albert E. Bulson, of Fort Wayne, diana; Conservatism in Rhinological Practice, by Dr. M. Berens, of Minneapolis; Mental Depression and olonged Melancholia following Graduated Tenotomy d the Limitation of Prisms, by Dr. W. H. Baker, of nchburg, Virginia; A Report of a Case of Double Mas- d Disease; Operations; Recovery, by Dr. J. O. Still- n, of Indianapolis; The Technics of Cataract Extrac- n, by Dr. B. E. Fryer, of Kansas City; Diseases of Labyrinth, by Dr. J. Holinger, of Chicago; Kerato- nus, by Dr. J. W. Bullard, of Pawnee City, Nebraska; Case of Inflammatory Glaucoma of Reflex Nasal Ori- , by Dr. J. Aloysius Mullen, of Houston, Texas; philitic Amblyopia, by Dr. Robert F. Lemond, of Den- ; Congenital Nystagmus, by Dr. J. Elliot Colburn, Chicago; Objective Noises in the Ear, by Dr. G. Ster- g Ryerson, of Toronto, Canada; The Function of the pedius and Tensor Tympani Muscles, by Dr. Thomas Rumbold, of St. Louis; Saline Injections in the atment of Cyclitis and Iritis, by Dr. S. L. Ledbetter, Birmingham, Alabama; College Instruction in Oph- lmology, by Dr. A. M. Lapsley, of Keokuk, Iowa; Value of Hypnotic Suggestion in Ophthalmic Prac- , by Dr. Ignatz Mayer, of Guthrie, Oklahoma Terri- ; A Description of Dr. McCassy's Trial Frame, Lac- ial Style, and Threaded Handle, by Dr. J. H. Mc- sy, of Dayton, Ohio; The Lens Tester, and Why it is Used, by Dr. J. H. Johnson, of Kansas City; The Ætiology, Treatment, and Prognosis in Exophthalmic Goître, by Dr. J. Fred Clark, of Fairfield, Iowa; The Extraction of Bilateral Soft Cataract in the Case of a Child Three Years Old, by Dr. J. O. McReynolds, of Dallas, Texas; Two Cases of Asthma due to Intranasal Growths, by Dr. W. W. Bulette, of Pueblo, Colorado; Aural Pain, by Dr. A. M. Howe, of Wichita, Kansas; The Influence of Vaporized Medicaments on the Respiratory Passages, by Dr. Homer M. Thomas, of Chicago; Hysteria in Ophthalmology, by Dr. W. L. Dayton, of Lincoln, Nebraska; Otitis Media Circumscripta, by Dr. C. M. Holcomb, of Winfield, Kansas; Ulcers of the Cornea, by Dr. H. Z. Gill, of Pittsburgh, Kansas; Hypertrophic Rhinitis, by Dr. W. T. Grove, of Eureka, Kansas; The Relative Value of Enucleation and Evisceration, by Dr. A. R. Amos, of Des Moines; A Plea for Milder Treatment of the Conjunctiva, by Dr. E. W. Ames, of Canton, Illinois; Thrombosis of the Lateral Sinus, by Dr. B. F. Church, of Dallas, Texas; Notes on Nasal Surgery, by Dr. A. E. Prince, of Springfield, Illinois; Chronic Rhinitis as a Factor in Weakened Vision, by Dr. Joseph A. Daniel, of Davenport, Iowa; The Treatment of Corneal Lesions by Hydraulic Curetting with Sublimate Solutions, by Dr. Thomas H. Pleasants, of Helena, Montana; Advanced Methods in Teaching the Deaf, by Dr. M. A. Goldstein, of St. Louis; Three Cases of Suppuration of the Frontal Sinuses Treated by Means of the Air Douche, by Dr. P. F. Gildea, of Colorado Springs; Toleration of the Eye to Severe Injuries, by Dr. H. G. Sherman, of Cleveland; A Case of Mastoiditis complicating Purulent Otitis Media, in which a Cure was obtained by Enlarging the Drum Perforation and Syringing the Tympanic Cavity, by Dr. William Sheppegrell, of New Orleans; The Relationship of Obscure Throat Symptoms in Adults to the Pharyngeal Tonsil, by Dr. H. Moulton, of Fort Smith, Arkansas; Suppurative Inflammation of the Frontal Sinuses, by Dr. Frank E. Sampson, of Creston, Iowa; Experiments on the Eustachian Tubes by Means of the Tongue Thrust into the Nasopharynx, by Dr. Hamilton Stillson, of Seattle, Washington; Atrophic Rhinitis, by Dr. I. Cullen, of Cincinnati; Artificial Membrana Tympani, by Dr. E. W. Heltman, of Toledo; Otitis Media, by Dr. E. M. Singleton, of Mashalltown, Iowa; A Throat Manifestation of Transmitted Syphilis, by Dr. H. W. Whitaker, of Columbus, Ohio; The Relative Value of the Various Treatments for Deafness Due to Otitis Media, by Dr. J. F. Oaks, of Chicago; Eustachian Catarrh, by Dr. M. Jay Brown, of Salina, Kansas; Nitrate of Silver, by Dr. Charles E. Walker, of Denver; and Lymphadenoma, with a Report of Cases, by Dr. C. W. Parker, of St. Louis. Other papers will be read by Dr. W. E. Gamble, Dr. Charles H. Beard, and Dr. T. Allen Haight, of Chicago, Dr. Frank Allport and Dr. J. H. Martindale, of Minneapolis; Dr. J. D. C. Hoit, of Elmwood, Illinois; Dr. C. W. Kollock, of Charleston, South Carolina; Dr. George Knapp, of Vincennes, Indiana; Dr. K. K. Wheelock, of Fort Wayne; Dr. F. E. Waxham, of Denver; Dr. F. C. Heath, of Indianapolis; Dr. Francis B. Kellogg, of Tacoma, Washington; and Dr. D. Emmett Welsh, of Grand Rapids, Michigan.

The Schott Treatment of Heart Diseases.—At a meeting of the Philadelphia County Medical Society held on January 27th Dr. Solomon Solis-Cohen, assisted by Dr. Charlotte West, demonstrated the exercise part of the Nauheim treatment, and announced that he expected to have soon in operation appliances for using artificial Nauheim baths in conjunction with the exercises.

The method of exercise, the speaker went on to say, is called by Dr. Schott *Widerstandsgymnastik*—resistance gymnastics. Perhaps the best way to English this term would be to call it *resistance exercises*, but this alone would not convey the idea. "Swedish movements" are resistance exercises, too; but this system is differently carried out. "Gently resisted movements" would perhaps convey the idea better. The patient makes very slight efforts with various muscles, and these are resisted by the operator very gently. As the treatment progresses the resistance is increased, calling upon the patient to put forth greater exertion. There is a course of exercises laid down by Dr. Schott, the whole occupying from thirty minutes to an hour, but the number and degree of movements are varied according to the patient's requirements. With the speaker's patients only twenty minutes' exercise has thus far been attempted.

Dr. Schott says that his system consists of slow movements made by the patient and resisted by the operator, short intervals being allowed for rest. The exertion should be small and the patient should be loosely clothed and told to breathe quietly. This matter of quiet breathing is quite important. It must be watched and controlled by the operator. The resistance should not be of such a kind as to prevent the patient from feeling master of the situation. The operator must not grasp or in any wise constrict the limb, but oppose by the hand held flat. The following rules are laid down:

1. Each movement is to be performed slowly and evenly, that is, at a uniform rate.
2. No movement is to be repeated twice in succession in the same limb or group of muscles.
3. Each single or combined movement is to be followed by an interval of rest.
4. The movements are not allowed to accelerate the patient's breathing, and the operator must watch the face for the slightest indications of (*a*) dilatation of the alæ nasi; (*b*) drawing of the corners of the mouth; (*c*) duskiness or pallor of the cheeks and lips; (*d*) yawning; (*e*) sweating; and (*f*) palpitation.
5. The appearance of any of these signs should be the signal for immediately interrupting the movements in process of execution, and for either supporting the limb which is being moved or allowing it to subside into a state of rest.
6. The patient must be directed to breathe regularly and uninterruptedly, and should he find any difficulty in doing so, or for some reason show a tendency to hold his breath, he must be instructed to continue counting in a whisper during the progress of each movement.
7. No limb or portion of the patient's body is to be so constricted as to check the flow of blood.

The physiological effect and therapeutical object of these procedures are to accelerate the flow of blood through the vessels, and diminish the work thrown upon the heart, allowing its chambers to contract more readily —hence the importance of attending strictly to the details mentioned.

Dr. Solis-Cohen then described the exercises. They have already been described in this journal in an excellent article by Dr. Rives (see *New York Medical Journal*, April 11, 1896).

He then quoted from the writings of Dr. W. Bezley Thorne, of London, as follows: "The results, in fact, are such as would scarcely be believed by any one but an eye-witness. It is by no means uncommon in cases of dilatation to see within one hour the oblique long diameter of the heart's area of dullness diminish by from three quarters of an inch to an inch and a quarter, and, perhaps more surprising still, to observe a diminution of as many as two inches, in vertical measurement, of a liver which at first extended to the umbilical level; and to hear the patient, at the conclusion of what can not be described as an ordeal, volunteer the statement that a load has been removed from the præcordia, that he breathes easier and more deeply, and experiences a sense of general relief. Such gains are not permanent, and in the time that intervenes before the next day's exercises or baths, as the case may be, the dilated and congested organs tend to their former size, but do not wholly relapse. A slight proportion of the gain is held and succeeding increments until, as the result of treatment, perhaps at the end of a few weeks, the dilated heart and the congested liver have recovered their normal dimensions, or at any rate such contraction and compensatory power in the one case, and resolution in the other, as to make them practically sound."

Sir T. Grainger Stewart concludes, said Dr. Solis-Cohen, as the result of personal observation with the Nauheim treatment:

"1. That in a large proportion of cases it effects immediate improvement in the condition of the heart, as shown by percussion and auscultation; the sounds becoming more distinct and the area of dullness diminishing to a greater or less extent.

"2. That in many cases the rhythm of the pulse improves, and the beat becomes more vigorous.

"3. That while the immediate effect is in so fa temporary, the heart rarely goes back to its previou condition of dilatation, but remains somewhat smalle than it had been before the exercises, and that graduall improvement of a lasting kind sets in, so that the hear recovers its tone and the area of dullness permanentl diminishes."

As to the effect in cases of valvular lesions, said th speaker, it is stated that in the course of the first fe movements a bruit due to stenosis is observed to b accentuated, that afterward diminishes, as the peripher resistance lessens. In the case of a patient shown th accentuation of the bruit has remained, the sound first having been but faintly heard, owing to the weakness of the cardiac muscle, and its greater audibili now being interpreted as a sign of increased muscul vigor. Indeed, it is urged as a diagnostic merit of th method that valvular lesions previously unsuspected ma become recognizable by the development of murmu during treatment. Murmurs due to insufficiency oth than that caused by actual lesion of the valves are dimi ished in intensity, modified to duplication, and final obliterated. In cases of early valvular lesions, the mu murs are said to disappear as the final result of trea ment. The condition of the cardiac muscle is much improved in the long-continued cases that I ha had under observation that we may readily believe t statement that in early cases all traces of myocardi are removed.

The counter-indications against the treatment the entire range of chronic cardio-vascular affections advanced arteriosclerosis, decided degeneration of cardiac muscle, and aneurysm. Some of the conditi earlier deemed counter-indications are not now so c sidered. Thus, in the patient before you this eveni a quite advanced case of arteriosclerosis, the exerc have certainly done much good. The only absolute co er-indications that remain generally insisted on are narked atheroma, as with pipe-stem arteries, and ad- anced cases of aneurysm in which clots might be loos- ned and emboli thrown out into the circulation. One hould, however, be cautious until he has had sufficient xperience to decide for himself. It might be very rash or me to apply the method in a case Dr. Schott might) treat with benefit.

Dr. Thorne states that he has witnessed improve- ient amounting to practical or actual cure in cases pre- nting the physical signs usually regarded as indicative f the following affections: stenosis of either the aortic : the mitral orifice, stenosis of both; insufficiency of ther or both, with attendant dilatation; dilatation con- quent on myocarditis, on habitual hæmorrhage, and on nstitutional anæmia; fatty heart (interstitial); weak- ied heart; congenital mitral insufficiency; patent fora- en ovale; and angina pectoris of apparently both neu- tic and organic causation. He adds that "it is reason- le to assume that measures calculated to diminish ripheral resistance and to promote the nutrition and pair of the cardio-vascular tissues must be applicable at least the early stages of aneurysm of the heart and eat vessels."

The physiological mechanism by which this is ac- mplished is in brief that the gently resisted movements, rried out as described and demonstrated, dilate in turn e peripheral vessels in every section of the body, dis- id the lymph spaces, relieving the veins, thus em- ying for therapeutic purposes the pumping action of muscles and securing increased filling of the arteries d better emptying of the heart. In other words, by reasing the volume of circulation in both arteries l veins, by better filling of the vascular system gen- lly, including lymph channels and lymph spaces, and is affording a much larger peripheral area for the od. The left heart is better emptied by invitation the blood out of the capillaries, the arterioles, the ger arteries, the aorta, and back pressure upon the auricle being relieved, the right heart is relieved ough the pulmonary circulation, and thus the veins still further emptied, the congested liver often mark- diminishing in size. In effect the peripheral pump ibstituted for the central pump of the circulation, and latter being able to contract upon the lessened quan- of blood, now becomes able to do its work once more, all this without the use of any drug.

I have here, said Dr. Solis-Cohen, some careful notes he case before us which have been made by Dr. West. vill not be necessary to read them in full. The pa- t, a widow, fifty-eight years old, came under observa- at the Philadelphia Polyclinic on the 2d of October, , having had influenza, of three weeks' duration, ar before, followed by dry pleurisy. For the past years she has been subject to attacks of dyspepsia nervousness. A good deal of mental disturbance recently made her more nervous. In addition to the eptic symptoms, she sought relief for dyspnœa, con- t and increased on exertion, headache, vertigo, and inuous palpitation of the heart which gave rise to ind heard in the left ear. There is also at times a ition of "stoppage" of the heart. While in high ides (Colorado) she was subject to fainting spells. xamination, the heart was found dilated and dis- d to the left, the apex-beat being in the sixth in- ace an inch to the left of the nipple. Both sounds feeble, the second being relatively accentuated. e was a faint, harsh systolic murmur, heard best at the aortic cartilage and feebly transmitted into the neck. The pulse was small, feeble, its rate 96, with the patient standing, the artery somewhat hardened. There was occasional intermittence. Small quantities of albumin and granular and hyaline casts were found in the urine. There was no œdema.

Under treatment the heart has receded until the apex, from being an inch to the left of the nipple, is now permanently half an inch to the right of the nipple; and from the sixth interspace it has receded into the fifth. The sounds are stronger, the first is markedly so, and the movement is more distinct, though perhaps softened in quality. Intermittence has ceased. The artery is larger, the beat fuller and slower; the record of to-day being 68 with the patient seated. The sphygmographic tracings which I exhibit, and which were taken before, immediately after, and ten minutes after the exercises on a number of occasions, the pressure being but slightly raised, as recorded, and the instrument and the observer being the same in each instance, show the great improvement in the fullness of the arteries and in the character of the beat. For instance, at the beginning of treatment there was scarcely any elevation of the lever and the tracing is markedly that of rigid, unfilled arteries—the tidal wave being wanting. This may be contrasted with the recent tracing in which the pulse is beginning to resemble a normal pulse, the elevation being, however, less than normal, and the tidal wave still obscured, for, of course, we have not given the patient new arteries. The patient has lost her unpleasant symptoms, except that there is still a slight noise in the ear. In especial she has lost the extreme depression and dread of suffocation which was the most distressing feature of the case.

The albumin has disappeared from the urine and I find that similar cases are also recorded by Dr. Schott and Dr. Thorne. In another Polyclinic case, one of mitral regurgitation and interstitial nephritis, the albumin was markedly diminished, but did not entirely disappear. However, the patient felt so much better, her œdema having gone, and her dyspnœa being relieved, that she declared she was well and went back to work. For this reason I was unable to bring her before you this evening. In conclusion let me say that this is but a preliminary communication to call your attention to the subject, in the effort to atone as much as possible for my long neglect of the method, by doing my share to make its merits more widely known.

From reading and my limited observation, I believe the Nauheim system to be one of the greatest advances in the line of therapeutics without drugs that have yet been made; worthy to rank with Brand's cold-bath treatment of typhoid fever and the pneumatic treatment of pulmonary tuberculosis. It is more troublesome than the writing of prescriptions, but in suitable cases much more effective.

Rapid Canities.—The rapid and premature decoloration of the hair, says M. Féré, in the *Progrès médical* for January 23d, has been known for a long time. Pechlin, Stahl, and others have cited examples. Premature canities may be general or partial. It is more frequently partial and confined to the scalp and even to a more limited region. Partial canities may be produced in connection with a peripheral irritation more or less remote. Hilton has cited a case in which canities of the temporal region only was produced during an attack of dental caries in the lower maxilla of the same side.

More frequently it is coincident with neuralgia or follows mental emotion. It is to the emotions generally that rapid general canities is due, and it is especially the acute or chronic painful emotions which are found to be the cause. Cassan reports the case of a woman who had been summoned to appear before a court of justice to give evidence, and, under the influence of the great mental strain, her hair turned white in a night. Parry cites the case of an Indian soldier who had taken part in a rebellion, whose hair turned white during an examination which was the prelude to a sentence of death. Junius, Guarini, Petit, MacGillicuddy, and Thompson have cited cases in which the hair turned white suddenly.

Cases in which this decoloration is not sudden, but very rapid, says M. Féré, appear to be more frequent. Bichat cites several of them, and Moleschott accepts those which were communicated by Richter. The possibility of sudden or rapid canities has been denied by dermatologists, notably by Kaposi; however, says the author, emotional canities, like neuralgic canities, finds its physiological analogy in Brown-Séquard's experiment, which consists in watching normal canities closely at its onset; it will be easily ascertained that the hairs whiten through their entire length during one night. Emotional canities, continues M. Féré, seems to be favored by pressure. When after a shock the subject remains for a certain length of time with his head supported on his hand or on his arm, the part which has received the pressure may be the only one attacked, or, at least, it may be attacked in a more pronounced manner. The author cites a case of this kind which was communicated to him several years ago. The subject, a boy five years old, was out driving with his mother when the horse ran away. The child was greatly frightened, but sustained no physical shock. Two days afterward he presented over the entire body a fugaceous eruption without fever, and about eight days later five white locks of hair were discovered on the left side of his head. The position and shape of the decoloration corresponded to the imprint of five fingers. The mother remembered that she had held her hand on the child's head in this position when she had tried to protect him. The decoloration persisted and the spots increased in size, and at the present time the largest spot, which corresponded to the position of the thumb, was of almost the size of a two-franc piece. M. Féré thinks that the pathogeny of this localization is very obscure. He relates in detail the history of another case which came under his observation, which he thinks is worthy of attention. It is not, however, he says, of a nature to clear up in a precise manner the pathogeny of the localization of partial canities, but it accentuates somewhat the probability of the predisposing influence of a previous and localized trouble of nutrition. Localized decoloration has also been seen to follow an injury.

The Therapeutical Application of the X Rays.—At a recent meeting of the Société médicale des hôpitaux, a report of which appears in the *Progrès médical* for January 30th, M. Rendu related the case of a young man, twenty years old, who presented all the symptoms of infectious pneumonia, although in an examination of the sputa a bacteriologist professed to have found Koch's bacilli. The situation seemed to be hopeless, and the patient's father asked that the Röntgen rays should be used in the treatment of his son. Daily applications of fifty-five minutes' duration were then begun, and after the third application a very distinct amelioration was manifest. The fever fell, there was natural perspiration, and there was a very abundant diuresis.

After the first application there was produced on the skin where the rays had penetrated an intense erythema which was followed by blisters, then an eschar which did not heal for several weeks. M. Rendu questioned whether recovery was the result of the acute revulsion produced by the erythema, or whether it was the result of a still hypothetical action of the X rays on microbes. He thought that the patient was not tuberculous. Moreover, he said, the attempts that had been made to obtain recovery in tuberculosis by the Röntgen rays had not yet given any positive results.

Experimental Tuberculosis Mitigated by the Röntgen Rays.—In the *Fortschritte der Medicin* for Februar 1st there is an abstract of an account, published in th *Semaine médicale*, of some experiments undertaken b M. Lortet and M. Genoud nearly a year ago. On Apri 23d eight guinea-pigs were inoculated in the fold of th right groin with bouillon that had been infected with guinea-pig's tuberculous spleen. Two days later, thre of the animals were stretched out on a board and th inoculated region was exposed to the influence of th Röntgen rays. This was done daily for about an hou for fifty-three days. On the 9th of June the five chec animals were observed to have spontaneous abscesse and their inguinal glands of the affected side were so tened. On the other hand, the three that were und treatment with the Röntgen rays had no abscesses an their inguinal glands were firm and sharply define Nine days later, the five check animals showed abunda suppuration in the inguinal fold or on the thigh, and th had manifestly grown thin. The three that were und treatment were in good condition and had gained weight; their inguinal glands were small, having gra ually shrunk, and showed no tendency to suppuration.

The Röntgen rays, therefore, are held to have pr vented the acute development of tuberculosis in th instance. The authors suggest the therapeutical emplo ment of them in cases of tuberculous disease of t thoracic and abdominal organs, especially in children.

The New York Academy of Medicine.—At the l stated meeting, on Thursday evening, the 18th ins Dr. Thomas M. Rotch, of Harvard University, was to re a paper on The Use of Modified Milk in Health a Disease, which was to be discussed by Dr. A. Jacobi, L. Emmett Holt, Dr. Allen M. Thomas, Dr. W. P. N thrup, and Dr. J. P. Crozer Griffith, of Philadelphia.

At the next meeting of the Section in Laryngol and Rhinology, on Wednesday evening, the 24th in the following papers will be read: Anatomical Defects the Faucial Pillars, by Dr. J. E. Newcomb; and Chro Hypertrophy of the Lingual Tonsil, by Dr. Francis Quinlan. Cases will be presented and instruments hibited.

At the next meeting of the Section in Obstetrics Gynæcology, on Thursday evening, the 25th inst., G. H. Balleray, of Paterson, New Jersey, will rea paper entitled Remarks on the Diagnosis and Tr ment of Extra-uterine Pregnancy in the Early Mon and Dr. Herman J. Boldt will read one on Ectopic tation. Cases will be reported and specimens presen

The Laryngoscope, published in St. Louis, annou that it has been selected as the official organ, for year 1897, of the Laryngological Section of the New Academy of Medicine.

Lectures and Addresses.

THE LAW AND THE DOCTOR.

THE INAUGURAL ADDRESS
DELIVERED BEFORE THE SOCIETY OF MEDICAL JURISPRUDENCE,
January 11, 1897.

By E. F. BRUSH, M.D.,
MOUNT VERNON, N. Y.

THERE is a current story illustrative of an unfortunately common phase of human nature, which runs thus: A judge before whom two malefactors were presented for sentence deemed them each deserving one hundred lashes, and a question arose who was to administer the whipping. The judge, understanding human nature pretty well, said to the jailer, "Strip these men, furnish each of them with a good whip, tell them to give the prescribed number of lashes to each other, and I'll guarantee it will be well done." So the jailer did as he was ordered, and the men with glee and complete acquiescence in the judge's apparent leniency commenced o carry out the sentence of the court by giving each other alternately a light tap of the whip. After a little of this play one of the prisoners thought the other had given him an unnecessarily sharp cut, and responded with what he considered an equivalent, creating in the ther the same apparent cause for complaint. Thus desire of mutual revenge was engendered, and it beame necessary for the jailer to call for assistance to revent the two men from going beyond the judgment f the court. In like manner law and crime become engeful, and the result is that in many cases both suffer nnecessarily. Years ago law and lunacy whipped each ther more severely than law and crime do to-day, but ow law does not return the imaginary blow from the nsane, and all the teachings of the present time are ointing out to law the uselessness of measuring blows ith crime.

Law and crime have been confronting each other nce man became a social being. The deterrent effect law's punishment for crime, according to the best dgment of the students of criminal anthropology, is l. As early as 1839, Matthew Davenport Hill, the hilanthropic recorder of the English borough of Biringham, stated, in commenting as a sequel to a charge the grand jury, "I have often had occasion to remark w rare it is to find any person who has had experience criminals to attach weight to deterrents." And later, 1847, in a charge to the grand jury he uttered the folwing words: "The longer I sit on this bench the humer grows my opinion of the efficacy of criminal jurisudence, especially as regards its deterrent operation her on the offender himself who is visited with the nalties of the law, or on those exposed to temptation who have not yet found their way into this dock. us impressed, gentleman, it will not surprise you that I am always looking round with a careful eye to find other means of diminishing the quantity of crime which prevails among us. These means range themselves under two heads, the prevention of crime and the reformation of the criminal." I quote these words of Recorder Hill to show that more than fifty years ago, when even the rational treatment of the insane was not an accomplished fact, there was an English judge, surrounded as he must have been at that time by the conservative prejudices of a profession whose respect for the common law almost amounted to idolatry, who was profoundly impressed with the wrong and insufficiency of law punishments, and whose ideas of reform were as broad and as humane as are those of the most advanced criminologists to-day. Recorder Hill well knew that he was not in harmony with the prevailing opinion of his time, for he writes in the sequel to his charge to the jury in 1845, after recommending some simpler laws, amusements, ragged schools, and suggestions for the prevention of crime instead of its punishment, as follows: "Years probably will elapse before these suggestions are held to be anything better than dreams. Be it so, but throwing them out is a step, though a short one, to their realization." It is not too much to say that the marked reformation in the trials and judgments of crime dates from the year 1839, when Matthew Davenport Hill began his charges to the Birmingham grand jury, and I believe any student that reads his book, *The Repression of Crime*, will conclude that no one has done more to humanize the law toward crime than Recorder Hill, during the eighteen years when he was really the advance advocate of other means than severe and indiscriminating punishment for the treatment of crime. It is not necessary to quote the modern advocates of the curative treatment of crime, because we all know that the modern school of criminologists denounces indiscriminate punishment and advocates discriminate treatment. Punishments belong only in the family, to the army, and in penal institutions where it may be necessary to enforce discipline, and here only moderate in degree, because it is a well-known fact that to individuals, be they child or adult, who are not amenable to mild punishment, severer forms are worse than useless. The word punishment in every sense of its meaning ought to be eliminated from courts of justice. Goethe said that one of the most interesting books that could be written would be a treatise on the errors of mankind, and a glance backward over the records of courts of justice bring before us some of the most pitiful errors of the human race. Starting only from the time when the prisoner charged with felony was not allowed to have counsel, nor his witnesses to be sworn, we see a steady reform which throws a black shadow of cruel wrongs behind it, and leads us to hope that we are surely advancing to the time when the medical profession, itself shaking off the heavy drapery of ignorance and error, will go hand in hand with the lawgiver in establishing sound and humane principles of law and medicine, waiting to reclaim the unfortunate victims of disease whose morbid state leads him in the paths of crime. Without sickly sentiment or pity as an emotion which never does much good in this world, but with pity as a motive, which is a Godlike force and when properly directed will accomplish great good, we, doctors and lawyers, banded together under the name of The Society of Medical Jurisprudence, can advance the science of criminology with more force and greater assurance of public approval than any other association of the learned professions. Law is defined as the sum of all knowledge, medicine as the healer of all infirmities, mental and physical; in law the lawyer is confined to facts, the physician is allowed to express his opinion, but when cold and glittering facts are arrayed by a human mind trained to give no weight to other testimony, cruel injustice is often committed. Likewise, matters of opinion unsupported by facts are often worse than the grossest ignorance. When, however, these two combine, when opinion tempers facts and facts support opinion, the irresponsible sick who find their way by a well-beaten path to the bar of justice will not be sent to the jailer nor the executioner for a cure. Take any of the modern books on criminology or relating in any way to crime, and how quickly the truth is forced upon us that many of the criminals are victims of arrested brain development or actual brain disease. Nor is it always necessary to find brain and nerve disease as the only morbid factor causative of crime. It is conceded by the most eminent medical practitioners that slight functional derangements affect the will, often to such an extent that the ability to resist a criminal instinct or impulse is abolished. It will probably be many a day before these lighter ephemeral ailments will be admitted as testimony for mitigation in the judgment of crime, but we have, unfortunately, a large number of prominent brain lesions and nerve disturbances as material for many years of labor. Had the doctor been working hand in hand with the lawyer in the first quarter of this century, Thomas Wainwright, the murderer of four people, would not have been transported to Australia for the crime of forgery. This man, whose history is given in many works on criminology, was clever, with literary and artistic tastes and education; as antedating his crimes, he himself describes an attack of illness which left him a hypochondriac, "ever shadowing on the horrible abyss of mere insanity." After this he began to write essays under a *nom de plume*, and was described then as a man of "many sentimentalities and superrefinements." He then committed his first crime of forging a draft, taking five thousand pounds from a fund on which he was drawing the interest, forgery at that time being a capital offense. He next poisoned his uncle, in order to get his house; his mother-in-law, for eighteen thousand pounds insurance on her life; his sister-in-law, because, as he said when asked why he killed her, "Upon my soul, I do not know, except that she had thick legs." The fourth murder was of a man whom he killed in order to obtain money on a life insurance, which, however, he could not collect. While in Australia, too, he made attempts to poison two persons. He died of apoplexy at the age of fifty-eight, while serving out a sentence for his first crime of forgery. Now, should this man have been punished by the law, or should he have been treated by the physician for chronic meningitis or some other brain lesion? Take a look at Inspector Byrnes's book, *The Professional Criminals of America*. Among the photographs in this book taken from the Rogues' Gallery, we find No. 2, "David Bliss, alias Dr. Bliss. Sneak; thirty-nine years old in 1886; born in the United States; married; doctor; slim built; height, five feet eight inches and a half; weight, one hundred and thirty-five pounds; light-colored hair *turning gray;* gray eyes; long face; light complexion. *Has a hole on the right side of his forehead.* Record: The doctor has a fine education and is a graduate of a Cincinnati medical college; he is a Southerner by birth, and at one time held a prominent government position. He was caught stealing, however, and sentenced to a long term of imprisonment. Through the influence of his friends he was pardoned, but again drifted back to evil ways." The record then goes on describing several other arrests and imprisonments, and says he is considered a very clever sneak thief. This is all the description we get with his photograph. Now, here we have a man of good birth and education and many influential friends. He has a hole in the right side of his forehead, which the photograph does not show, consequently we do not know the extent or the exact location. There is another significant point in the description of this man—light hair turning gray. Of course, the significance of gray hair in a young person, especially one whose hair is naturally light, is not fully understood; but if one goes through a lunatic asylum he will observe something that has been always a puzzle to me—a very marked streak of gray hair just beyond the forehead in many young dark-haired female lunatics. This may be only a few hairs or a broad, pronounced streak; but I have always been impressed with the notion that an unusual occurrence of gray hair has some pathological significance. Certainly I do not mean to infer that every one who has this streak of gray hair is insane, neither d I wish it to be taken that every one who is a lunati has it, but I think it is significant and worthy of study and I am not aware that any one has given it the attention it seems to deserve. Although this story from Byrnes's book in relation to No. 2 in the Rogues' Galler is vague, yet we can not help feeling that such a ma should at least have had the benefit of a thorough medical examination before he was allowed to become a habitual criminal. There is another remarkable characte in Byrnes's book. No. 98 in his gallery of photograp is Franklin J. Moses. Description: Forty-four years age in 1886; born in South Carolina; lawyer; marrie slim build; height, five feet eight inches and three quarters; weight, one hundred and thirty pounds; dark hair turning gray; blue eyes; sallow complexion; large Roman nose; generally wears a heavy mustache quite gray; dresses fairly well; good talker. Record: Ex-Governor Moses, of South Carolina; graduated from Columbia College, and served as private secretary to the governor of South Carolina for two years. Served as speaker of the house for two years; made governor, holding that office for two years. His father, an estimable man, was at one time chief-justice of the Supreme Court of South Carolina. Shortly after his term of office expired Moses started in victimizing friend and foe alike. He was first arrested in New York city on a requisition from South Carolina for uttering a forged note for three hundred and sixteen dollars. When he arrived in South Carolina he was released on parole and allowed to escape. Was not his one of those instances of mistaken kindness? He was either an incorrigible thief or a victim of disease, and in either contingency he should not have been al-owed to be at large. The remarkable fact about his ubsequent swindles was that they were all for small mounts. Byrnes, at all events, gives no sum above orty dollars. This man excited considerable vindictive ontempt, especially among the judges and lawyers. Now, neither of these men, a doctor and a lawyer, appears o be just a common thief. Some of the drug habits or he alcoholic habit might have led to ex-Governor Moses's all; if the latter, surely this is recognized as a disease menable to treatment. There are many other surmises e might take from Byrnes's book, but, however complete may be for the policeman, the book is vague and un-tisfactory to one studying the medical side of criminol-gy.

It is an acknowledged truth that needs no argument, at the line between sanity and insanity is a very fine ne, and sometimes lost entirely; this is also true of crime, though we are not so willing to acknowledge it. I ad a very close personal friend, a minister of the gos-l, a man of undaunted integrity, courage, and almost ery attribute that goes to make a perfect member of ciety. He many times told me that he would ave the most awful thoughts of crime and a desire to some dreadful act, and that a great part of his life was unted by a fear that he might in some way lose con-ol of his will power and commit some overt act. Per-ps this mental condition was similar to that which dis-rbed Martin Luther the reformer, who, according to s own statements, was always contending with a per-nal and visible devil, and probably only the preserva-n of his inhibitory powers saved him from becoming ane or criminal. But my friend led a quiet, unblem-ed life, and one of his most marked characteristics s the sympathy which he always evinced for crim-ls. A great majority of children even in good families instinctive criminals, and we see many criminals who ve all the characteristics of children—"selfish, prone to passion, giving way to anger at the slightest opposition to their wishes, indifferent to the welfare of others, and resenting deprivations and disappointments, sometimes cruel to animals, delighting in delusions and false statements, and gloating on pictures of cruelty and slaughter." These things, of course, denote an undeveloped brain structure, which undoubtedly is the cause of much crime as well as insanity in the adult.

In this age no one denies that there are members of the criminal class who are amenable to treatment, and not all of these are subjects of physical disease. Many of the younger criminals are reclaimed by better food, housing, and humane environments. It is a curious fact, and one that is disheartening to the reformer, to see an institution like that established in 1818 near Birmingham, in England, allowed to perish for want of support. At the small village of Stretton-on-Dunsmore Sir Eardley Wilmot and others established the Warwickshire Asylum for Convicted Boys. This was a small, unostentatious house capable of containing twenty boys, and under the care of a master the boys were taught shoemaking, tailoring, and regular farm work. There was nothing prisonlike about the treatment, but the boys were retained until the master was convinced that they were cured of their criminal tendencies, and then they were allowed to go back to society. The period of residence ranged from one to three years. For the first nine years of this asylum "81 boys had been committed, of whom 39 had reformed and 42 were failures; 32 of these 39 were more than fifteen years old, and of these 32 there were 20 reformations and 12 failures. Again, of these 32 above fifteen years, 26 were above sixteen years of age, and of these 26 there was a larger proportion of reformations than among the 32 above fifteen years—namely, 17 reformations and 9 failures. Again, of the 26 above sixteen years of age, 8 were above seventeen, and of these 8 there was a still larger proportion of reformations than in the 26 above sixteen years—namely, 6 reformations and only 2 failures." Thus showing that the older the inmates the greater was the proportion of those reformed.

This institution was closed in 1854, probably on account of the death of the Rev. Townsend Powell, Vicar of Stretton-on-Dunsmore, who was the superintendent of the asylum, and one of its founders and "its soul," he serving without fee or emolument of any kind during the entire thirty-six years that the school existed, and probably also from lack of funds after Mr. Powell's death, as there was an effort made to raise other funds, which effort failed. "This fabric rose, flourished, and passed away, all honor be to its memory. The noblest and most enduring monument will be found in the succession of future institutions of a similar character, and in the universal recognition and adoption of those sound and just principles which, confined for a long period within the walls of Stretton, are now carried abroad by the winds of heaven and are finding their way into every heart throughout the length and breadth of our land." So wrote J. E. Eardley Wilmot, a descendant of one of the founders. No such institution has, however, been established in England since that day, but the sound and just principles were wafted to America, where they have crystallized in the establishment of the Elmira Reformatory, founded in 1877 by the State of New York. This institution is acknowledged by all criminologists everywhere in the world as a model reformatory and a successful exponent of the curability of crime.

The success obtained by the methods employed at the Elmira Reformatory is doing more in this age to encourage the work of the criminologist than any other organized effort that has preceded it. The class of inmates is limited and somewhat selected, but the good accomplished is marked and decided. The London *Law Journal*, in an extensive article explaining the workings of the institution, concludes in these words: "The working of the New York Reformatory at Elmira appears at present to furnish a model upon which English prison authorities, if not those of the whole world, might well build an improved prison system."

But all this is not what I started out to call your attention to, nevertheless it is encouraging to us to see how much has been done that was neglected in former years, and this is especially due to the large amount of work done in the field of criminology throughout the world. Certainly it may be said, we are not specially criminologists, but as an association of lawyers and physicians part of the general work of our kindred professions surely comes under this head. It would be perfectly proper for this society to recommend a plan of medical examination of every prisoner who is convicted on a criminal charge, for the first offense at least. An especially printed blank filled in by the examining physician ought to be presented to the judge when the prisoner is brought before him for sentence. It could not be considered unreasonable to have one or more physicians attached to every court, whose duty it should be to examine carefully every convicted prisoner before he is sentenced. The examination should be very thorough, in fact embodying a complete clinical history of the prisoner. The physician's examination blank would in many cases indicate to a thoughtful judge whether or not a convicted prisoner before him should be summarily committed to a place for undoubted criminals, or placed where there would be a possibility of healing some bodily ailment and thereby curing a criminal.

Crime and insanity often begin with the invasion of many of the common maladies of humanity. Professor A. Jacobi, speaking of the causes of insanity and crime, says that the small pinworm has been known to produce mania, and that diseases of the heart influence the circulation of the brain to such an extent as to produce moral disturbance. The changes in the life of woman which alter her nature likewise produce "alterations of the brain and its functions." In fact, all sick conditions that affect the brain and its functions do at times eventuate in crime or insanity, or both. An examining physician in the jail ought to be able to distinguish the alcoholic, epileptic, insane, the vagabond, the morally insane, and the degenerates, and all the pathological conditions of life that disturb the circulation of the brain and weaken the will power of man. Undoubtedly many first crimes are committed under conditions induced by some of the drug habits so prevalent to-day. Probably, too, puberty and the menopause are responsible for many crimes of females, and there are a multitude of causes, in the decay and disease that are going on about us and in us, that can only be distinguished by the doctor. Dr. Austin Flint truly says: "The reformative treatment of criminals is that which appeals most strongly to us as members of a profession whose mission it is to alleviate suffering and preserve health and life. We do not ask if it is worth while to attempt to reform criminals, but simply 'Can they be reformed?'"

Thus, when the doctor has examined the convicted prisoner and informed the lawyer of the true mental and physical condition of the individual to be placed before the bar of justice, and the judge takes these facts into consideration, in his judgment then the words of Richard Hooker will be true: "Of law there can be no less acknowledged than that her seat is the bosom of God, her voice the harmony of the world. All things in heaven and earth do her homage, the very least as feeling her care and the greatest as not exempted from her power."

Original Communications.

SANITARIA FOR THE TREATMENT OF INCIPIENT TUBERCULOSIS.*

By E. L. TRUDEAU, M. D.,

SARANAC LAKE, N. Y.

Experience gained in the development of the Adirondack Cottage Sanitarium during the past thirteen years, representing as this institution does a practical experiment in the direction of the subject under discussion, may furnish evidence of interest as to the practicability, necessity, and safety of special hospitals for the treatment of pulmonary tuberculosis.

Few will dispute the urgent need of putting forth our best efforts to stem the destructive tide of so formidable a disease, and still fewer will deny that comparatively little is done at present to that end. If we recognize that tuberculosis in its earlier stages and mor chronic forms is a curable disease, and that in its mor acute types, or when far advanced, its victims have, o humanitarian grounds, a claim to be cared for; if we als bear in mind that most tuberculous patients are a dange to the community in which they live, it is evident that, in dealing with tuberculosis in the poorer class of patients, the two main problems to be met are to furnish one class with a place where they can be treated in the earlier stages of their disease with a reasonable prospect of success, and to afford the other class an asylum where they can be properly cared for until they die, and that by so doing the spread of the infection in the community will be greatly lessened.

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* Read before the New York Academy of Medicine, January 2 1897.

The lot of the consumptive, when poor, at best a hard one, has been rendered still harder by the discovery of he infectious nature of tuberculosis, and has resulted hus far only in his being shunned and refused admision to the wards of general hospitals where hitherto he vas allowed to die, while no provision has been made for is care elsewhere. The urgent necessity for special hositals for the reception of the poor consumptives of large ities, who are beyond the hope of recovery, is a crying eed at present, which will be conceded by all on humanarian as well as on sanitary grounds. Such hospitals ould be located outside but within convenient distances f large cities, and should consist of one or more pavilns connected by galleries, and so constructed that each ard can easily be kept clean and free from dust acrding to modern methods, while an ample air space allowed for each patient, and the most thorough venlation with an abundance of sunlight is secured.

Such institutions would afford the unfortunate vicms of the disease a place where they can be cared for hen helpless, and where they would no longer be a enace to the health of the community. The large ount of infectious material now scattered by such tients among the closely packed inhabitants of crowd tenements could be easily cared for by this plan and dered harmless, and it would seem reasonable to hope at such hospitals would decrease the number of cases urring each year. This view already finds support in observation that since the establishment of hospitals. consumptives in England on a large scale the general th-rate from tuberculosis has fallen perceptibly.

The curability of pulmonary tuberculosis in its car stages is amply demonstrated by evidence obtained the autopsy room and by clinical observation. Early hisis is therefore a disease which should be treated, which yields under intelligent management a fair portion of cures. The special hospital or sanitarium the curative treatment of early tuberculosis should o located, constructed, and managed as to afford its ates, first, security from reinfection either by the ercle bacillus or by septic organisms; secondly, the t favorable hygienic and climatic environment obable. A discussion of the best climates for tuberus patients will not be considered here, further than tate that although it may be conceded that there specific climate for tuberculosis, the favorable influ of certain localities upon the course of the disease been abundantly proved by experience, and is a factor which we can not afford to neglect in combating a malady which, in the majority of cases, runs its course to a fatal issue in spite of the most intelligent and best-directed efforts to arrest it.

Since the records of general hospitals have long ago shown that aggregation is a real danger to the consumptive, the best plan to be adopted for a sanitarium in which to attempt the cure of early and favorable cases of pulmonary tuberculosis is the one which would most certainly obviate the evils of aggregation; and for this reason alone, at a time when the germ origin of tuberculosis was as yet unproved, I adopted at the Adirondack Sanitarium the cottage plan as the best to meet the requirements of such a hospital. The new light thrown by science on the infectious nature of tuberculosis, and an experience of thirteen years in developing a sanitarium on this plan, have but strengthened my confidence in this method of construction. The cottage plan represents an attempt at segregation, and if the principle which it stands for could be applied to the tenement-house residents of New York by the adoption of cheap rapid transit, a great and practical step in the direction of curtailing the ravages of tuberculosis would have been taken.

This plan of construction separates the patients as much as possible from one another, and affords each individual so large an air space as to make it difficult, when rigid precautions as to the care of the expectoration are enforced, for the buildings to become contaminated. Besides, it affords patients a regular walk to and from their meals, which are served in the main building, encourages them to lead an outdoor life, and allows them to select as companions those who are congenial to them, and avoid unnecessary contact with those who are not.

The cottages of the Adirondack Sanitarium are one-story buildings, which accommodate from two to ten persons, but the greater number have a capacity for four or five inmates only, and these have been found the most satisfactory. Each patient has his own room, which opens into a central sitting room in direct communication with the veranda, on which the outdoor plan of treatment is carried out. The partitions between the sleeping and general sitting rooms reach but seven feet from the floor, an arrangement which gives the patient the benefit of the entire air space of the cottage, and allows of its being heated by a single fireplace or stove located in the central sitting room; but the walls which separate the sleeping rooms from each other reach to the ceilings, and are of solid construction. Good ventilation is insured by transoms located over the front veranda. In the main or administration building are to be found the dining room, kitchen, reception and general sitting rooms, superintendent's and doctor's offices, rooms for servants and nurses, while the upper floor of the building is devoted to large rooms for a limited number of patients. The library, recreation pavilion, doctor's cottage, chapel, and infirmary, are all separate buildings.

Should any patient in one of the cottages become rapidly worse or be taken suddenly ill, he is at once removed to the infirmary, where every convenience for his care and proper treatment is at hand. The separation of those who are failing rapidly or are acutely sick from the comparatively well not only furnishes the former with the constant and necessary attention and nursing which they require, but withdraws them from the daily observation of their more fortunate cottage mates, and prevents in these the depression of spirits which would otherwise occur from the contact with the very sick. The success of this plan is attested by the general cheerfulness of patients while in the institution, who, contrary to what might be supposed, are very rarely depressed in spirits at their enforced exile.

The efficacy of the cottage plan, when combined with rigid measures for the care of the expectoration, in protecting the patients from the dangers of infection, has been well shown by the experience gained at the sanitarium. A study of the dust of all the buildings, by Dr. Irwin H. Hance, indicated that with one exception the dust taken from these cottages was free from tubercle bacilli or septic germs, although the buildings had been inhabited by consumptives for many years. The exception was a small cottage accommodating but two patients, one of whom had already been reported for carelessness in the matter of expectoration. Additional evidence bearing on the protection against infection afforded by the methods in use at the sanitarium is furnished by the significant fact that during thirteen years not a single employee has been known to have contracted tuberculosis in the institution.

It is greatly to be desired that the actual degree of danger entailed by necessary contact with a tuberculous patient, and a more accurate knowledge of just what this danger is and where it lies, should take the place of the unreasoning terror which is now beginning to seize the lay and to a marked extent the professional mind; which often, without accomplishing the desired end of protecting those who are exposed, does a grave injustice to the afflicted patient. Education in this direction, while pointing out the real danger which lies in carelessness as to the disposal of the expectoration, should insist as well that the presence of the consumptive entails little or no risk where the expectorated matter is properly cared for; that his breath and proximity are not infectious; that the tubercle bacillus in the present state of our civilization is somewhat ubiquitous, and its presence is not confined to the immediate proximity of a tuberculous patient; that the risk is limited to the susceptible, and that susceptibility to infection is greatly increased by all such unfavorable conditions of environment as are grouped under the term of "bad hygiene."

It has been objected by some familiar with all the foreign institutions which are not on the cottage plan, that this method of construction makes it impossible for the patient to be under the constant supervision of the physician. To my mind, however, this objection has but little weight when applied to an institution which treats only early and favorable types of pulmonary invalids, because almost all these patients are so well as not to require such constant supervision, and those who are in need of it are placed at once in the infirmary, where they are constantly under the physician's and nurse's eye. Indeed, the infirmary should represent on a small scale the ideal foreign sanitarium, with its nurses, conveniences, and many appliances for treating the more advanced and acute types of the disease. But in such a sanitarium as I refer to the number of this class of patients should be limited to those who are suffering from some of the accidents incident to the disease, or who have grown worse while in the institution. The only valid objection which I know of to the cottage plan is the greater expense entailed in constructing and operating so many detached buildings.

A laboratory for bacteriological work is also an indispensable requisite of the outfit of every well-equipped sanitarium. Besides the valuable aids which laboratory methods bring to the study of the disease and the diagnosis of obscure cases, it is to these methods that we must look in future for much-needed light upon many of the still unsolved problems relating to ætiology, prophylaxis, and disinfection, and through their application only can we reach satisfactory conclusions as to the real value of many of the specific methods of treatment which are constantly proposed, or make any progress in the development of such methods.

Rigid rules as to the selection of suitable cases fo treatment are by no means easy to lay down in a dis ease which runs so irregular a course. The first rul is to make as early a diagnosis as possible, for the ear lier the diagnosis is made the better will be the pros pect of effecting a cure or arresting the progress of th destructive process. The first few months after th onset of the disease present often the one golden op portunity of re-establishing the balance of health, an many lives are constantly sacrificed to the neglect of th opportunity. If the curability of the earlier stages of tu berculosis could be more generally accepted, and fo this reason the grave responsibility which rests on th physician in making an early diagnosis better realize the patient's best chances of recovery would not be constantly sacrificed.

The apathy of the profession as to the importance making an early diagnosis seems almost incomprehe sible, and would indicate that the general opinion held that climatic and sanitarium treatment should be a vised only as a last resort. The microscopical examin tion of the expectoration, instead of being repeatedly a plied as soon as any expectoration is obtainable, is ve generally neglected, or only resorted to when the sym toms have become unmistakable in order to confirm t diagnosis. Thirteen years ago but few really incipie cases presented themselves for treatment, and the earl stages of the disease were generally labeled pleurisy, bronchitis, or malaria, until hæmoptysis, rapid emaciation, marked hectic or cavity signs appeared. But the microscope and the light which has been thrown on the ætiology of pulmonary affections by the discovery of the germ origin of tuberculosis, and the variety of its many manifestations, have wrought already some change for the better in this direction. The occurrence of slight hæmoptysis as an initial symptom, and before any constitutional impairment is noticeable, should be a most fortunate event for the patient, and in many cases proves to be the first symptom of pulmonary tuberculosis. Such an occurrence makes imperative a most careful study of the rational and physical signs, together with a biological examination of any expectorated blood or sputum obtainable from the patient. Unfortunately he is too often ulled into a false and to him a most acceptable sense of security by the verdict that it is nothing; that the bleeding came from his throat or his stomach; and he coninues his usual mode of life until a more alarming hæmoptysis or the occurrence of constitutional impairment makes the nature of his malady evident.

The fully developed chest or comparatively robust appearance of many patients with early tuberculosis often roves misleading to the examiner, and induce him to reax his vigilance, to minimize the symptoms, and to wait or further developments. Too great reliance is perhaps laced on the physical signs alone, which at first may be ther absent or can be detected only by a trained ear, nd too little importance is attached to the study of the istory and the rational symptoms. In insidious cases, ssitude, some loss of appetite, a little quickening of e pulse rate, a temperature reaching occasionally 99.5° 100° at irregular intervals, with or without slight loss weight, are a group of symptoms which usually attract tle attention but which should be regarded with suscion. And if, in addition to these, morning pallor dispearing toward evening, some cough, prolonged exration, or even impairment of vesicular murmur are ted, the patient should be closely watched, every ort made to obtain more positive evidence, and if it not obtainable otherwise, the aid of laboratory meths in helping to clear up the diagnosis should not be glected. If there is expectoration, and the presence of bacillus can not be detected by repeated and thorough minations, a positive conclusion can often be reached hin three weeks by inoculation of the expectoration in guinea-pig, and when there is no expectoration, by tuberculin test.* By this method a positive opinion way or the other can often be reached; and if the ini dose does not exceed half a milligramme, the conutional disturbance caused by it is slight, and no injury to the patient has in my experience ever resulted from such a test in the limited number of cases in which it has been necessary to employ it. The value of the tuberculin test in shedding light upon obscure cases of suspected tuberculosis, whether pulmonary or surgical, has not yet been generally realized.

As soon as the diagnosis of tuberculosis is established, particularly if the bacillus has been demonstrated in the expectoration, no matter how well the patient may appear, he should at once be told the grave nature of his malady and an immediate removal from his surroundings should be urged, while it is explained to him that the best and possibly the only chance of restoration lies in prompt action and the adoption of thorough measures. Although obedience to this advice undoubtedly necessitates great sacrifices on the part of the patient, he will, if it is at all possible, rarely hesitate to make them, provided the gravity of the situation is plainly laid before him and the necessity for prompt action explained; and if this is not done, he will be called upon to make the same sacrifices later, and when they can prove of little or no avail.

The position physicians take who purposely deceive patients as to the nature of their malady by telling them the bleeding comes from the throat or that they have grippe, malarial disease, or bronchitis, is difficult to understand, and does the patient a grave injustice.

It will be justly urged that in a great majority of cases among the poorer classes it is absolutely impossible for the patient to follow the advice given. This is greatly to be regretted; and while it in no way relieves the physician of the responsibility of making an early diagnosis, and advising prompt and radical measures to those who can afford to follow his advice, it is a strong plea for attempting to provide for a greater number of these unfortunates sanitaria where they can find the climatic and hygienic surroundings necessary for the treatment of their disease as soon as its presence is recognized.

The principal aim of the modern sanitarium treatment of tuberculosis, which can only be briefly outlined here, is to improve the patient's nutrition and increase his resistance to the disease, by placing him under the most favorable environment obtainable. The main elements of such an environment are an invigorating climate, an open-air life, rest, coupled with the careful regulation of the daily habits, and an abundant supply of nutritious food, with the exhibition of such restoratives and tonic measures as may be indicated in each case. A discussion of the advantages of various climates will not be considered further than to call attention to the fact that for truly incipient cases the more tonic and colder climates seem indicated by the comparatively good condition of the patient; and this view is strengthened by a study of the influence of cold on the weight of the patients at the sanitarium, the average gain in weight every year being greater during the fall and winter months than in the spring and summer.

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* In using this test an initial injection of not more than half a milliime of Koch's tuberculin or its equivalent should be made. If the perature remains normal this can be increased at intervals of three first to one, and then, should no rise of temperature have occurred, o milligrammes.

The invigorating influence of a life spent constantly out of doors for many months can hardly be overrated. To remain, in most cases, the greater part of the time quietly sitting, well wrapped up, out of doors in all weather, is one of the main duties imposed upon every patient at the sanitarium, and, irksome as such a course would at first seem, it is in a majority of cases faithfully carried out by them after their timidity and prejudices as to its danger have been gradually overcome by the benefit derived in their own persons. This constant exposure to atmospheric influences in so severe a climate as that of the Adirondacks, at all temperatures and in any weather, proves the best possible stimulant to the assimilative powers of the patient whose life has been almost entirely spent in close and overheated rooms, and has in my experience been free from danger when intelligently applied. Patients but rarely suffer from colds or intercurrent attacks of bronchitis, and only one case of lobar pneumonia has occurred at the sanitarium among the hundreds treated there during the last thirteen years.

Besides warm clothing in winter, protection from the wind is the only requisite for this treatment, and a good shelter is obtained by a single glass or wooden screen placed on the exposed side only, the usual glass-inclosed piazza being an abomination never allowed. The outdoor method is applied to all patients, but the details of the treatment, and above all the amount of exercise allowed in carrying it out, are regulated by the activity of the patient's disease, his nutritive condition, and more especially his temperature record. Thus the few infirmary cases who may be suffering from progressive tuberculous processes or cheesy pneumonias, and running high temperatures, are carried outdoors daily and kept there in a recumbent position in bed or on a lounge the greater part of the day, while those who have less fever and are improving, are allowed to sit up in steamer chairs on the veranda, and to walk about the infirmary, but not to go over to their meals in the main building until their temperature record and improved condition warrant it, when they are returned to their cottages. In the class of cases which is represented by the inmates of the cottages, the temperature rarely goes above a hundred in the afternoon, or they are entirely apyretic. The former are ordered to remain quiet out of doors during the afternoon, when slight fever is apt to occur, and to walk to their meals at the main building but not to go off the grounds; while the apyretic cases are generally allowed, so long as they live out of doors and obey rules, to go where they please, and, while under daily observation, to take as much exercise as their condition seems to render permissible.

It is much better, however, always to err on the side of overcaution in prescribing active exercise to tuberculous patients, and I feel confident that many lives are constantly sacrificed to a deep-rooted and very general misconception, which exists in the lay and to a great extent in the professional mind as well, in regard to the advantages of active exercise in this disease. If there is any one rule that should be generally applied to the treatment of tuberculosis it is, that when any degree of fever is present the course of the disease will be injuriously affected in direct proportion to the amount of active exercise the patient is allowed to take. Still further, I constantly see an apparently quiescent and arrested process fanned into renewed and often uncontrollable activity by one single violent overexertion.

This position in regard to exercise may seem rather an ultra one, but it has been amply sustained by abundant and unfortunate experience in this direction. What is but moderate exercise for a man in health means overexertion and exhaustion to the phthisical invalid. To see a man with a daily afternoon temperature of 101° to 102°, and a pulse above one hundred, trying to gain strength by rowing a boat, riding a bicycle, or attempting to climb a mountain, as he is often advised to do, and to note the baneful effect of this course on his disease, will prove more convincing than any form of argument. Absolute rest, so long as it is taken in the open air, is the best measure at our command to reduce the pyrexia of tuberculosis and to conserve the patient's energies, and should be persisted in for some time after the afternoon fever has ceased to be present, moderate exercise again being allowed only with caution.

At the sanitarium the utmost attention is given to the alimentation of the patient, and every attempt is made to induce him to take and digest as much nourishing food as possible, but the details of this part of the treatment can not be entered into here.

Alcoholics are never prescribed in early cases as a part of the treatment.

Little stress is laid on the administration of drugs, except when necessary to relieve symptoms, but cod-liver oil, the hypophosphites, and arsenic are very generally made use of. Creosote is prescribed in small doses only, and in cases where cough and profuse expectoration seem to indicate its administration, or where its tentative use has shown that it improves rather than impairs the patient's appetite and digestion.

Tuberculin treatment has been employed for the pas four years with the utmost caution and in selected case only, in order that some evidence as to its specific influence when given under the most favorable conditions c environment might be obtained. Its use has been foun inadmissible in the active types of the disease, and i administration in large enough doses to produce marke reaction inadvisable and even injurious in all cases. I the apyretic types of the disease, when the patient nutrition is good, if given in very small and very gradually increasing doses, so as never to produce any rise temperature, its use has been found free from dange and the proportion of recoveries in the patients treate has been encouraging. In such cases, if the treatme be extended over a period of from six to eight month the dose may be gradually raised from the equivalent of a tenth of a milligramme of Koch's tuberculin to so large an amount as a hundred milligrammes without causing the slightest reaction. As the cases, however, in which this treatment seems permissible are likely to do well under the ordinary climatic and open-air treatment alone, little evidence as to its curative value can be claimed from their recovery. The injections, nevertheless, seem to have had a favorable influence in preventing the natural tendency of the disease to relapse, which occurs in a certain number of patients who recover under climatic and hygienic methods alone. Of the twenty cases treated with tuberculin which have been discharged as cured during the last four years but two have died, one of an acute mania, in an insane asylum, and the other of alcoholism, while none of the eighteen others has thus far suffered any relapse. Unfortunately it is impossible to determine whether this apparent immunity to relapse is the direct result of the tuberculin treatment, or whether the tolerance to large doses of tuberculin shown by these patients indicates that from the first their tuberculosis was of a subacute or benign type.

The exact results obtained by the combined climatic and sanitarium treatment are difficult to express in figures, because these results are greatly influenced by the class of cases accepted for treatment, and the classification of these cases is necessarily purely arbitrary. In addition, the term "cure," as indicating the results obtained, can also be used only in a relative sense. If, however, all attempt at classification is abandoned, and the gross results obtained in all the patients admitted to the anitarium are considered, it may be stated approximately hat twenty per cent. are apparently cured, and that in hirty per cent. more the disease is more or less perma-ently arrested. If the most favorable of all the cases admitted are separated under the term "incipient," the roportion of cures obtained would be as high as from hirty to thirty-five per cent., and the importance of making an early diagnosis and of the immediate appli-ation of radical measures is strongly emphasized by his experience.

The education the patients receive at the sanitarium to the nature of their disease and the methods to be lied upon in combating it, is of the utmost value to em in enabling them to care for their health and avoid lapses after they have left the institution.

Conclusions.—Sanitaria for the reception of advanced ses of tuberculosis occurring in the poor are greatly eded on philanthropic and sanitary grounds.

Tuberculosis, if detected in its earlier stages, is cur-le in a fair proportion of cases.

It is of vital importance, therefore, that the diag-sis be made early.

The best results in treating incipient tuberculosis are tainable in special sanitaria situated in good climates.

The best plan of construction for such sanitaria is e cottage plan, or some of its modifications.

CHOLELITHIASIS WITHOUT ICTERUS:

CASUISTIC AND DIAGNOSTIC REMARKS.*

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In recent years an enormous literature on the subject of cholelithiasis with irregular symptoms, particularly as to biliary calculi with an absence of icterus, has arisen; but it would seem that, despite this fact, a thorough knowledge of that form of cholelithiasis which runs its course without jaundice has not been acquired by the general practitioner, especially in this country. A detailed discussion of this branch of the subject is therefore timely and useful. In undertaking, at the invitation of the president, briefly to review in your presence the theme of gallstones without icterus, I can not assume to discuss all the questions arising in this connection, nor can I more than refer to some of the complications and obscurities which present themselves. I ask your permission only to consider briefly and on the basis of my own experience a few of the more important clinical, diagnostic, and therapeutic points.

In the vast majority of cases coming under this heading we have to deal with affections of the gall bladder and of the cystic duct. There are, however, observations recorded in which, after impaction of a gallstone in the common or in the hepatic duct, the disease has run its course, especially in the later stages, without jaundice; and this occurs when the ducts attain such a degree of dilatation that the bile can readily flow by the impacted stones. Some years ago I had the opportunity of performing an autopsy in a case—which was very interesting for other reasons, and which has been published by Dr. Moschowitz—in which the gall bladder, the cystic duct, and the ductus choledochus up to the papilla of Vater, were filled with gallstones, as was also the hepatic duct, and in which the biliary passages were so dilated that a stasis of bile was impossible. As a matter of fact, no jaundice was present, at least during the period of observation. But I will not venture further into this field nor will I discuss diseases in more distant organs occasioned by gallstones, such as ileus due to biliary calculi, obstruction of the pylorus, pylephlebitis, and thrombosis, all of which are usually not associated with jaundice; for these digressions, cognate as they are to our discussion, would lead us too far.

It is an old-established and unquestionable fact that calculi may lie in the gall bladder for many years, for even a lifetime, without calling forth clinical manifestations or decided anatomical changes. According to Schröder's statistics, gallstones are found in twelve per cent. of all autopsies. If the calculi do produce symptoms, however, by far the most frequent is biliary colic. This arises from the forced entrance of a stone into a biliary passage, in our cases into the cystic duct. The active causes in driving calculi from the gall bladder into the cystic duct have not yet been clearly ascertained; but it appears to be definitely proved that processes going on in the stomach and intestines play an important rôle. It has been ascertained that increased peristaltic movements of the stomach and intestines, that traction due to a distention of the gut, to unusually severe exercise, etc., evoke spasmodic contractions of the muscles of the gall bladder, which tend to drive the calculus toward the duct. Riedel doubts, and as I think justly, whether the rather slight muscles of the gall bladder are capable of exercising such colossal pressure, especially when the cystic duct is patent. He assumes that in every case an initial inflammatory process causes, on the one hand, intumescence and stenosis of the cystic duct with consequent stasis in the gall bladder, and on the other hand increases the pressure within the gall bladder by inflammatory transudation to such an extent that the calculus is driven into the cystic duct with great force. He leaves us entirely in the dark, however, how to account for such an inflammatory condition or how to explain such an aseptic process; and it must certainly be aseptic, for in a whole series of cases the bile was found to be sterile even during an attack.

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* Opening remarks of a discussion at the German Medical Society of the City of New York.

If the calculus is small it is driven through by the spasmodic contractions of the cystic duct, passes through the common duct, and reaches the intestines. If the stone is larger—and these are the cases which interest us principally—various possibilities may arise. The stone may remain impacted in the neck of the gall bladder and thus cause a permanent closure of the cystic duct. The calculus may fall back into the gall bladder, the irritation ceases, the bile again finds its usual outlet, and the condition of affairs remains temporarily or permanently as it was before the attack. It is possible, again, for the calculus to be driven for some distance into the cystic duct, where it can be tightly grasped by the mucous membrane and the muscles of the duct, and a permanent obstruction of the duct is thus established as the result of the impaction aided by inflammatory proliferation of the surrounding tissues. Again, the duct may become dilated, first above the obstruction and later all around it. In this event, the bile again flows normally, the morbid symptoms disappear, and the normal functions are apparently carried on despite the presence of the calculus. The stone can continue to grow, too, although impacted in the cystic duct. In this manner enormous dilatation can be produced or diverticula are caused, and these may evoke, through pressure upon the neighboring organs, such as the common duct, the liver, the portal veins, or the intestines, the most severe and the most complicated pictures of disease. Infection also rarely remains absent. Infectious cholangeitis and cholecystitis result, most frequently by means of the ubiquitous *Bacterium coli commune* or the pus-producing cocci. In this manner pericholangeitic abscesses, ulcerations of the mucous membrane, perforations into the peritoneal cavity and into the neighboring organs, particularly the intestine, are produced. General sepsis may easily follow or accompany these processes. As malignant and acute as these manifestations sometimes appear, just as frequently do their phenomena remain latent and insignificant. It seems certain that extensive adhesions of the gall bladder and the cystic duct to the organs in the vicinity, the liver, the stomach, the intestines, the omentum, the abdominal wall, may be formed without demonstrable gross pathological changes in the walls of the gall bladder or of the duct. Calculi may remain wedged in the cystic duct for years, may increase in size, may even lead to ulceration of the mucous membrane and the formation of extensive cicatrization without at any time producing clinical symptoms. Finally, however, a time arrives when, either through infection or through some other cause, the entire process lights up acutely and violently, or perhaps insidiously and gradually, and presents before us a grave and often a very obscure clinical picture.

The clinical phenomena are even more irregular and obscure than the pathological changes which I have but cursorily glanced at. In the first place, it may be said that all these processes which affect the gall bladder and the cystic duct cause no jaundice as long as the hepatic and the common ducts are not involved. We find, therefore, an absence in this group of diseases of the one prominent symptom which at once directs attention to the liver and an obstructed flow of bile. It is easily comprehensible, therefore, that the diagnosis of these cases, although under certain circumstances simple enough, may become very difficult. Sometimes, indeed, it is simply impossible to reach an exact diagnosis and we must content ourselves with conclusions of more or less probability. And yet in the majority of cases it is possible, with a careful consideration of all the points in the history and with a thorough knowledge of the processes coming into play, to reach conclusions sufficiently definite to determine our therapeutic measures; and this is the salient point; for it is particularly true of these cases that correct treatment at the proper time may be actually life-saving. In view of the almost endless variety of clinical pictures with which we have to deal, it seem proper, instead of attempting to portray a hard-and-fas array of symptoms as they appear in individual cases, t consider some of the more important symptoms as t their diagnostic value.

Pain is one of the most striking symptoms; for nea ly all patients who suffer from gallstones, be it with without jaundice, have pain at some time in the cour of their illness. Frequently, it is the main subjecti complaint, and is often manifested as the typical biliar colic, though, of course, in the cases here considere without the appearance of icterus. Frequently the pa is referred to the classical spot in the right hypocho drium, radiating toward the median line and the e gastrium, and extending into the back and shoulders. But in a large number of cases, and especially in those affections of the gall bladder and the cystic duct with which we are at present concerned, the pain is referred mainly, almost exclusively, to the pit of the stomach. At the same time this point is particularly sensitive to pressure, and one must be on his guard not to confound this condition with ulcerations of the stomach and kindred lesions. In this connection, I wish to mention that Boas's pressure points as means of differential diagnosis have been of little service to me. I have no experience vith reference to them in cases of gastric ulcer, but in ases of gallstones I have not been able to convince myelf that typical painful points exist at the lower end nd to the right of the dorsal vertebræ. Moreover, we ind gallstones so very often among elderly women, in hom the dorsal vertebræ are not uncommonly hyperesthetic. Further, I would call your attention to a point f great practical importance—namely, that not infreuently in calculous disease of the gall bladder and the ystic duct the patients refer their pain to the ileocæcal egion. This occurs not only in the later stages after pus as formed, when even the surgeon finds it difficult to etermine whether the source of the suppuration lies in e gall bladder or in the appendix, but also at the very tset of the disease, long before palpable inflammatory mptoms have developed. In rare instances this striking phenomenon depends upon the fact that the disnded gall bladder has been dislocated downward toward e iliac fossa, often attached to a constricted and floatg portion of the liver. The position of the liver and ll bladder may, however, be entirely normal and the in still be referred to the iliac fossa. On the other nd, cases of appendicitis are not infrequently met th in which, especially in the beginning of the disease, e subjective pain is localized in the right hypochonium instead of in the ileocæcal region. This is easily derstood in instances in which the elongated appendix deflected upward toward the liver; but this peculiar loization of pain has been observed when the appendix upied an entirely normal position. I am not able offer any plausible explanation of this seeming parax.

Very often, however, the typical biliary colic does not ear, and the pain accompanying the passage of the uli through the ducts is of an entirely irregular and pical character. Indeed, it is my conviction that by the greater majority of biliary colics are of this gular type and as such escape the notice of the physi altogether. The patient diagnosticates his pain as euralgia," "wind colic," "indigestion," etc., and atutes it to indiscretions in diet, imperfect evacuations he bowels, "colds," etc.; and, as a rule, prescribes for self with perfect success the ordinary purgatives. , it is undoubtedly true that there are a number of tions, functional and organic, that can give rise to e or less acute pain in the epigastric and right hypochondriac regions. As such may be mentioned the true neuralgia of the liver described by Fürbringer, certain forms of gastric disease that are associated with hyperacidity, ulceration of the stomach, cancerous or otherwise, and the various neurotic conditions localized in this region, especially those of pure hysteria, etc. But all of these present besides the pain other well-marked symptoms, and can, in most instances, be easily recognized. In all those cases of more or less severe acute pain in the epigastric or right hypochondriac regions in which the conditions just mentioned can be excluded, it is safe to assume with some assurance that we have to deal with atypical biliary colics. The fact that the attacks so frequently follow indiscretions in diet or are ostensibly relieved by a purge does not militate against this assumption; for we know that the ordinary biliary colic, too, is often stimulated by irregularities in the gastro-intestinal tract. It is a further confirmation of this view that these "cardialgic" attacks occur almost exclusively in women, and this harmonizes well with the fact that women are by far the most frequent sufferers from gallstones.

Judging from my own experience, I can most emphatically indorse Riedel's warning not to regard it as an infallible sign that a gallstone has passed the ducts and arrived in the intestine that the pain has disappeared and the patient feels perfectly well. After the attack of colic, when examination of the fæces discloses no calculus, this is not always due to an oversight or to the fact that the stone has become disintegrated and unrecognizable, but very frequently to the fact that there has been no calculus in the intestines. The calculus simply did not find its way into the gut, but either dropped back into the gall bladder or remained impacted somewhere in the biliary passages, where it may shortly produce other severe attacks, or where it may quietly and unobserved cause ulceration or inflammatory processes which can at any time make themselves evident with symptoms of the gravest character.

At the time when the physician sees the patient there is frequently no longer a complaint of pain. The anamnesis elicits the fact, however, that almost without exception severe attacks of pain have been present, sometimes often repeated, and usually just before the physician is summoned. Objectively, sensitive areas can be found. As a rule, the liver is neither enlarged nor painful on palpation. But the region of the gall bladder or the epigastrium or both may be sensitive to pressure. When the recti muscles are relaxed and the lower edge of the liver is grasped from the gall bladder toward the median line, deeply seated painful points may often be discovered. Severe pain may sometimes be called forth in a liver which is not sensitive to ordinary palpation by *concussion* produced by pushing the flat hand quickly and sharply against the lower ribs from left to right. When diseases of the liver itself, peritonitis, inflammatory processes in the chest, and kindred lesions can be excluded, this symptom of pain on concussion of the liver is a valuable diagnostic sign of inflammatory processes going on at the inferior surface of the liver, which is not accessible to palpation.

In rare cases, all objective signs of pain may be absent while all other clinical symptoms point to grave disturbances. Under these conditions, the anamnesis and the exclusion of all other possibilities must decide the diagnosis. A case which I recently saw through the kindness of Dr. S. Baruch was most instructive in this respect:

The patient, an elderly lady, who had previously frequently suffered from "stomach troubles," was suddenly seized at night with an intense colic localized in the epigastric region. Despite large doses of morphine, the pain continued for several days. The epigastrium alone appears to have been sensitive to pressure. There was no jaundice, but shortly after the commencement of the pain fever of a decidedly remittent type appeared which, preceded by slight chilliness, repeatedly reached 104° F. and even higher. When I saw the patient the pain had entirely disappeared, but the fever continued, and was in the neighborhood of 103° F. at the time of my examination. The liver was of normal size, the gall bladder could not be felt, there was not the slightest sign of a painful pressure point nor any palpable anomaly. There had evidently been a biliary colic and an infection the results of which had survived the passage of the stone into the intestine. After the administration of a strong cathartic, a large number of small cholesterin calculi of recent formation were passed, and the patient recovered without further complications.

The *behavior of the gall bladder* is exceedingly variable. Oftentimes it can be felt in its typical location as a tense, firm, elastic tumor extending beyond the lower edge of the liver. Sometimes it is enormously distended and movable, especially when it is attached to a movable portion of the liver (*Schnürlappen*). A case is recorded in which the enormously dilated and dropsical gall bladder was mistaken for an ovarian cyst. Under such circumstances it can become rather difficult to differentiate between the gall bladder, floating kidney, etc., difficulties upon which we will not enter. On the other hand, the gall bladder is very frequently not distended, there is no enlargement whatever; on the contrary, it is atrophied and shrunken far below its normal size. Courvoisier has proved by statistics, and Ecklin has recently confirmed and elaborated his statements, that obstruction of the biliary passages by the impaction of calculi is in the majority of cases accompanied by a small, atrophic gall bladder, whereas when the obstruction is due to malignant tumor, dilatation and enlargement of the gall bladder is the rule. However, even when the gall bladder is distended and enlarged, it is not always easy to recognize it. It may be so covered by the liver that its palpation is impossible or, at least, difficult and unsatisfactory. The following case will serve as an illustration:

Mrs. V., about fifty years of age (Dr. Torek), has suffered for years from occasional "cardialgic" attacks, but was never jaundiced. During the night she had typical attacks of biliary colic, but neither icterus nor fever. The severe pain was alleviated by opiates, but dull pain, nausea, and vomiting continued. When I saw the patient she complained of great exhaustion, nausea, a dull, dragging pain in the region of the liver and in the epigastrium. The liver was not enlarged; the region of the gall bladder was sensitive to pressure. By deep palpation under the arch of the ribs it was just possible to make out the very tip of the gall bladder as an elastic and very sensitive round body. This was also the point of greatest sensitiveness. Concussion of the liver was decidedly painful. The temperature was 101.5° F. All the other organs were normal. The urine showed a faint but distinct reaction for bile pigments. During the following days the spontaneous pain disappeared, as did the vomiting, the pulse improved, but the temperature gradually rose without marked chills to 102.5° F. The gall bladder did not become more prominent, but the tension and sensitiveness of the lower portion, that could be made out with great difficulty, appeared decidedly increased. Cholecystotomy was advised and performed by Dr. Willy Meyer. At the operation the gall bladder was found to be almost entirely hidden away under the liver, and to reach it presented considerable technical difficulty. It was much dilated and was filled with a considerable quantity of thin, serous bile. Its walls were congested, thickened, and in a state of acute inflammation. A large number of faceted calculi, some as large as a cherry, were removed. Good recovery.

The walls of the gall bladder are often much thickened and the seat of fibrous or calcareous degeneration
Under such conditions it is not always an easy matte
to distinguish by palpation alone between a merely de
generated gall bladder and a neoplasm, especially whe
large calculi which are snugly embraced by the thic
and degenerated walls produce a distinctly nodular su
face. The gall bladder, besides the stones, may contai
normal bile, or the bile may be more or less inspissate
or, in consequence of profuse serous transudation from th
inflamed walls, the bile may become thin and watery—h
drops of the gall bladder. Following this, infection ofte
takes place, pus is formed, and instead of simple drop
we have empyema of the gall bladder. In consequen
of direct mechanical injury from calculi, especially fro
large, hard, and angular ones, more or less profuse hæ
orrhage into the gall bladder may result.

The following cases may serve as examples:

Mrs. R., an elderly lady, I had once before seen wi
her physician, Dr. Kakels, for severe hysterical ma
festations simulating meningitis. The patient, who h
bitually suffered from ever-varying hysterical attacks
pain, complained suddenly of intense pains in the sto
ach and abdomen; simultaneously with this, frequent a
copious vomiting; no icterus; no fever. The pains
creased in severity, but it was almost impossible to
amine the excited, hysterical patient. When I saw h
she was in a condition bordering on acute mania.
threw herself about, shrieking and yelling, jumped i
and out of bed, and could hardly be kept from doing h
self serious injury. On close questioning, though
maintained that she had excruciating pain everywher

seemed, nevertheless, that the principal pain was located in the upper part of the abdomen. Since the last visit of her physician, the temperature had risen to above 103° F., suddenly and with initial chills. With much difficulty an examination could finally be made, which disclosed, besides general hysterical hyperæsthesia, a normal condition of all organs, with the exception of the region of the gall bladder, where a distinctly increased resistance and intumescence could be made out. Here, too, was excessive tenderness of touch. The urine contained no biliary coloring matter. From these data it was considered probable that we had to deal with impaction of a stone in the cystic duct or in the neck of the gall bladder and empyema of the latter. Examination under ether with a probable cholecystotomy were advised. This was done by Dr. Lange. When the gall bladder was opened, its walls were found to be largely thickened with iniversal calcareous deposits. It contained a huge calculus, which was impacted with its more slender end in he neck of the gall bladder and in the upper part of the ystic duct. The gall bladder contained, besides, a large quantity of fluid blood which probably had its source n the mechanical irritation of the walls of the gall blader by the large calculus, enhanced, no doubt, by the vioent jactitation of the patient. Recovery.

Mrs. M., forty-two years old. Seen with Dr. Rapp. nervous woman, inclined to be hysterical. From her revious history it is learned that she suffers from occaional attacks of "cramps," which are ascribed to errors diet, and which run their course without jaundice or ver. The present illness began on January 3, 1896, ith an indefinite sense of pressure in the upper abominal regions. This was first suddenly noticed while e patient was taking a walk, and became more troubleme during the night. On the following day she was en by her physician, but an examination at this time as entirely negative. This sense of pressure, without sitive localization, continued until January 6th, when, an attempt to move the bowels, a sudden chill and bsequent high fever appeared. I examined the pant on January 7th with Dr. Rapp. We found thocic organs normal; pulse small, rapid. The patient was xious and excited. Tongue thickly coated. Liver t enlarged, and not painful on palpation. There was eat pain, however, on concussion of the liver. Spleen newhat enlarged. Epigastrium painful on pressure. ere was an increased resistance in the region of the ll bladder, and the entire area was somewhat intuscent, but no distinct tumor could be made out. Ow- to the extreme sensitiveness of this entire area, paltion was not possible to such a degree of exactness would have been desirable; nevertheless, there was a tinct impression of a doughy, somewhat elastic, diffuse lling. The other abdominal organs were normal. e urine contained neither sugar nor albumin, but gave istinct reaction for biliary coloring matter. The temature, of remittent type, ranged from 101.5° F. to ° F., and even higher. A rise of temperature was ays preceded by chilliness. The skin was pale, with trace of icterus. There could be no doubt that this a case of infectious disease of the gall bladder, prob- with occlusion by a calculus. The course of the perature and the doughy, diffuse swelling rendered diagnosis of empyema of the gall bladder probable. operation was suggested and was performed by Dr. ge on January 9th. A large empyema of the gall lder was found, and in addition to numerous stones he gall bladder there were a number of calculi, some of the size of a cherry, impacted in the neck of the bladder. Recovery.

In consequence of adhesions, old inflammatory processes, cicatrization, etc., the gall bladder may be so dislocated from its normal position and so altered in its configuration that it may become almost impossible to recognize it as such by palpation, and the diagnosis thus becomes correspondingly more difficult.

Mr. M., a robust man of some thirty odd years of age, had suffered repeatedly for a few years from occasional severe, typical attacks of biliary colic; besides these, he had at times irregular attacks of pain, often very intense, which had been variously regarded by his physicians—by some as irregular cholelithiasis, by others as neuralgia or gastralgia, as malaria, etc. Now the attacks ceased for some months altogether, and during this time the patient felt perfectly well. It was during this interval that I had an opportunity of examining him and noted these points: A robust, well-built man, with good pulse and regular, normal functions. Thoracic organs normal. The liver extended several centimetres beyond the arch of the ribs, but was not painful on touch or concussion. The area of attachment of the right rectus muscle to the ribs, and slightly to the right of this, presented increased resistance and slight relative dullness on percussion. Pressure over this area elicited pain, and this sensitiveness extended up into the epigastrium. A tumor or swelling could not be felt, even with the greatest possible relaxation of the recti. Contraction of the recti muscles was somewhat painful. The stomach offered no morbid symptoms. The spleen was distinctly enlarged. The other abdominal organs and the urine were normal. I concluded that in consequence of the frequent severe attacks of gallstones there were multiple adhesions of the gall bladder with the neighboring organs, particularly with the abdominal wall and the rectus muscle. In the mean time there was nothing to be done but to watch the course of affairs, since the patient was well and free from pain. After some months, in the summer of 1891, while the patient was in the country, he was suddenly seized with violent pain, vomiting, and fever. The attending physician diagnosticated appendicitis and hastily summoned a well-known and experienced surgeon who confirmed the diagnosis, and laparotomy was performed late at night. The removed appendix was, it is true, the seat of a catarrhal inflammation and was thickened; but it was not ulcerated nor was there purulent infiltration. There was also no sign of a general peritonitis, so that we are, perhaps, justified in assuming that although the patient was well rid of his appendix, the *causa morbi* did not lie in that organ. The patient recovered without difficulty from the operation and remained in good condition during the winter. In March, 1892, disturbances began to manifest themselves again: Loss of appetite, general malaise, sensations of pressure and pain, especially referred to the pit of the stomach. The pain was, as a rule, not very intense, but occasionally very severe attacks of pain appeared which had, however, no characteristic type. After a time a mild fever, 100° to 101° F., was noted. The urine showed a strong reaction for bilirubin. Pressure over the epigastrium became very painful, and the patient referred all his pain to this region. The region of the gall bladder showed sensitiveness to pressure, decidedly increased resistance, as compared with the former examination, an indistinct, quite diffuse intumescence; but there was no well-defined tumor, no fluctuation. A very slight jaundice of the skin and conjunctivæ became perceptible. It was concluded that an inflammatory process of infectious character had taken place in the adherent and dislocated gall bladder, and immediate operation was advised. The operation was performed by Dr. McBurney, March 27, 1892. The suspicion of empyema of the gall bladder was strengthened by the appearance, on the day before the operation, of a chill with a temperature of 103° F. The results of the external examination were so indefinite and slight, however, that the surgeons expressed themselves with great caution, and the laparotomy was regarded primarily as exploratory. The incision was made to the right of the rectus abdominis muscle, at the point of greatest resistance and intumescence. The fascia transversalis was found tense and somewhat bulging. As soon as this fascia was incised, there was a profuse flow of thick pus mixed with a large number of faceted stones. The gall bladder, as such, did not appear in the field of operation at all. After the pus was evacuated, a large cavity with irregular walls could be seen. This was adherent anteriorly to the abdominal wall and extended upward and inward toward the epigastrium. In its depths the cystic duct could be traced with some difficulty. The duct was filled with gallstones, and it was only after their laborious removal that at last bile began to flow through the wound. It seems safe to assume that in this case numerous adhesions of the gall bladder with the surrounding organs had existed for a long time and had served to distort and dislocate it. The sudden seizure in the summer, with peritonitic symptoms, referred to the appendix, was possibly due to perforation of the gall bladder, but which, owing to the matting together of the gall bladder, abdominal wall, etc., did not result in general but merely in local peritonitis. Subsequent infection caused the abscess. Numerous calculi were discharged in the course of the next few weeks following the operation. Otherwise the recovery was uneventful.

It may happen that all the inflammatory and infectious lesions affecting the gall bladder are accompanied by disturbances so slight and insignificant that the patient does not judge them sufficiently serious to consult a physician. The first and at once grave symptom for which medical aid is called is that of a peritonitis due to perforation either of the gall bladder, the duct, the intestines, etc.

Mrs. R., a patient of Dr. Wiener, aged fifty-two years, is a stout, nervous woman, with signs of premature arteriosclerosis and fatty heart. She suffers frequently from gastric disturbances and cardialgia. On November 1, 1895, the patient consulted her physician on account of a diarrhœa which had annoyed her at intervals for about ten days. There was no pain. Loss of appetite was her only complaint besides the diarrhœa. Physical examination at that time discovered nothing abnormal. The urine contained neither albumin nor biliary coloring matter. During the night of November 3d the patient, who in apparent good health had retired to bed after a very heavy meal, was suddenly seized with acute and very intense pain in the epigastrium and in the right hypochondrium, together with vomiting and with all the symptoms of collapse. The vomiting and pain continued throughout the next day. The temperature began slowly to rise. I saw the patient on the afternoon of November 4th. The temperature then was 103.5° F.; the pulse feeble, rapid, irregular; there was a slight cyanosis of the lips and finger nails. Continuous nausea and vomiting. The pain was quieted by morphine. The abdomen was distended. Pressure over the epigastrium was very painful. At the right of the epigastrium, extending along the arch of the ribs and downward toward the umbilicus, there was decidedly increased resistance, and over this area some dullness and extreme sensitiveness on pressure. On account of this condition the lower edge of the liver could not be satisfactorily made out. Concussion of the liver was very painful. There was no jaundice. With the exception of considerable tympanites, no other morbid condition in the abdomen could be found. The bowels were constipated, and, although high enemata had not been effectual, gas was freely and spontaneously passed. The urine contained no albumin, but unmistakably bilirubin. The lungs were normal. The cardiac dullness was increased in both directions, especially toward the right. The heart sounds were rather faint, somewhat rough, and the second aortic sound strongly accentuated. From the data it seemed evident that a peritonitis was present. The sudden onset, the acute and intense pain, the collapse, the rapidly rising temperature, pointed to a perforation as the cause. The dullness in the region of the gall bladder, the augmented sensitiveness to pressure over this area, the localization of the spontaneous pain in the same region, indicated the gall bladder as the site of perforation. On this account laparotomy was advised, but it was agreed, in accordance with the opinion of Dr. Lange, to wait until the patient had somewhat recovered from the first shock of the perforation. On November 5th the patient's general condition was somewhat better, the pulse was rather stronger, the vomiting had ceased. The temperature, however, remained high, and the dullness and pain in the region of the gall bladder were even more pronounced, although strictly limited to this region. On November 6th the operation was done by Dr. Lange. The incision at the assumed location of inflammation—which, owing to the mass of subcutaneous adipose tissue, was an unpleasantly deep one—disclosed, as was expected, a purulent peritonitis in the neighborhood of the gall bladder. The latter was much distended and tense, and about four ounces of turbid, purulent bile were removed from it by aspiration. Thereupon, incision o the gall bladder. Its walls were found thickened, in flamed, in part necrotic, and perforated in several places A large calculus was impacted in the neck of the gal bladder, and an attenuated prolongation of it extended into the upper part of the cystic duct. It is fair to as sume that the cystic duct had been occluded by the cal culus for a long time, while the latter had continued t grow in the direction of the gall bladder. Slow and in sidious infection followed, associated with inflammatio of the walls of the bladder and retention of the inflamma tory and suppurative exudation within the cavity. Th increased pressure tended still further to injure the wall thus resulting in necrosis, and finally perforation. Th entire process had been latent, and the first appreciab symptom appeared after perforation had taken plac The patient's recovery was uneventful.

I can not avoid briefly mentioning another case whic strictly speaking, does not come within the limits of o discussion, and which has already been referred to in publication by Dr. Lange. Let the interest which a taches to the case be my excuse.

Mr. E., about fifty-six years old, a well-built and healthy man, though occasionally subject to neurasthenic disturbances, more especially insomnia, has never had a real serious illness. Gastric functions always good. Is at times slightly inclined to constipation. On close inquiry, he admits that on rare occasions he has suffered from short spells of colicky abdominal pain, always referred to the inferior portion of the abdomen. The attacks he usually attributed to some imprudence in diet, and a mild cathartic always sufficed to give him prompt relief. On the night of the 12th to the 13th of March, 1896, the patient, who had retired to bed apparently in perfect health, was suddenly seized with severe pain. As he had eaten heavily the evening before and had indulged in several glasses of beer, he attributed his pain at first to indigestion. There was no constipation, as the bowels had been evacuated regularly and completely. The pain was localized exclusively in the umbilical region, was quite severe but not constant, appearing in spells of varying duration separated by intervals of comparative comfort. There was no vomiting, but considerable nausea, and the patient complained of great prostration and debility and a troublesome rumbling of gas in the intestines. I saw the patient on the morning of the 13th. He was rather pale, but had a good pulse of 80; quiet respiration; temperature, 99.6° F. Nausea and very severe attacks of pain in the umbilical region were the main complaints. Heart and lungs were perfectly normal. The tongue was somewhat coated and moist. There was no sensitiveness in the epigastric region, the liver was not enlarged, and was not sensitive to pressure or to concussion. The gall bladder could not be felt. The transverse and ascending colon and the ileocæcal region were sensitive neither spontaneously nor to deep pressure. Directly about the umbilicus, a little above it and to the right, there were great sensitiveness to pressure and increased resistance, but no dullness. The urine contained no sugar, no albumin, no bilirubin, but showed an increase of indican. No other lesion could be found. As morphine was not tolerated, suppositories of codeine were ordered, and a few of these sufficed to control the pain. In the evening there was nausea but no vomiting. The pain had almost entirely disappeared, but the areas mentioned were even more sensitive than in the morning. The resistance was increased, but there was no demontrable dullness. Pulse, 96; temperature, 101° F. On he morning of the 14th the pulse was 100, the temperaure 102° F. The tongue showed a tendency to dryness, he rumbling of gas in the intestines was still troublesome, though abundant flatus escaped, and there was incipient tympanites. Immediately above the umbilicus nd somewhat to the right of it there is increased resistnce, distinct dullness, and extreme sensitiveness to presure. In all other respects the examination shows no hanges as compared with the day before. In the afteroon the pulse rose to 120, temperature to 103.5° F.; he dullness is more pronounced. It was evident that e had to deal with a peritonitis which, though for the me being confined to the central region of the abdomen, howed, nevertheless, a progressive tendency, as evidenced by the constantly rising pulse and temperature nd the slow extension of the area of dullness. The sudden onset while in perfect health and the intensity of he initial pain spoke for a perforation. The appendix, all bladder, stomach, and colon, according to the data ust detailed as the result of careful examination, were ainly not involved. Hence the assumption seemed lausible that the perforation was located somewhere in the small intestine, possibly as the outcome of some chronic catarrhal ulcer which, as is well known, may up to the time of perforation remain entirely latent, causing no symptoms whatsoever. Guided by these considerations, it was decided not to wait for further developments, but to proceed to laparotomy at once. The operation was performed by Dr. Lange the same evening, about thirty-eight hours after the appearance of the first symptoms. The abdomen was opened at the point of greatest dullness and, as expected, a recent peritonitis, with cloudy, seropurulent exudation, and fibrous pseudomembranous deposits was found. The attempt to follow the track of the inflammation to its origin led to the vertebral column, in front of which, directly abutting upon the lower margin of the horizontal portion of the duodenum, a gangrenous mass of tissue was laid bare. The further development of the case was entirely favorable. In about a week the thick, necrotic slough could be removed, during which manipulation intestinal contents escaped from the duodenum. A few days later the point of a calculus appeared at the lower border of the duodenum at the place where the necrotic tissue had been removed, and was extracted without difficulty. After this the healing process continued undisturbed.

In this case neither the presence of the calculus in the biliary passages nor its transit through them into the intestine appears to have given rise to any disturbance. Having reached the duodenum, it produced, from causes entirely obscure, ulceration, and finally perforation of the wall of the gut. With the perforation appeared the first clinical symptoms, and these assumed from the very outset a most acute and grave character. There was absolutely nothing, either in the history of the patient or in the clinical and physical symptoms as they gradually developed, that pointed in the least toward gallstones. Even the laparotomy did not give us a clear insight into the true condition and sequence of affairs. The appearance of the gallstone at the place of necrosis at last furnished unmistakable testimony as to what had actually taken place.

A peritonitis may occur, however, without any perforation. In these cases, the inflammatory and infectious agents affect surrounding tissues through the walls of the gall bladder or duct. Ulcerations and necroses of the coats of the gall bladder extending down to the serosa may also cause acute peritonitis without actual perforation.

Mrs. H., a corpulent woman about thirty-four years of age, has in former years frequently suffered from "colic" and "cardialgia," the last time five years ago. In August, 1892, normal birth of her third child and a normal puerperium. During the night of the 6th to the 7th of October, 1892, she was, without premonition, seized with very severe pain in the epigastric region. There had been no constipation nor any demonstrable error in diet; no fever. The pain was localized at the pit of the stomach, radiating toward the back. The next day the pain continued, but was much diminished in intensity. The abdomen was not distended; the epigastrium was very sensitive to pressure. The liver was painful on palpation and concussion; sensitiveness to pressure also in the right ileocæcal region. Pulse, 96; temperature, 101.5° F. In the course of the day the bowels were freely and spontaneously evacuated and gas passed in large quantity. In the evening the patient had no spontaneous pain, but there was intense sensitiveness to pressure at the points mentioned. Temperature and pulse the same as in the morning. On October 8th there was little spontaneous pain, but severe pain accompanied every motion, even deep respiration. Directly beneath the right arch of the ribs at the level of the hepatic flexure of the colon, distinctly increased resistance, slight swelling, and dullness can be demonstrated. Temperature, 101° F.; pulse, 100. No vomiting; no nausea; no icterus. The urine contains no sugar; no albumin; but traces of bilirubin. In the course of the day the resistance and swelling increased at the place described; in the evening the temperature was 101.5° F. The swelling was now visible at a distance, and the entire area was extremely painful upon the slightest touch. The ascending colon and the ileocæcal region also continued extremely sensitive. During the night there was a severe chill. Temperature, 104.5° F.; pulse, 128; otherwise no change. On the next day, October 9th, the temperature remained high, ranging between 102° and 103.5° F.; the abdomen was not tympanitic; flatus passed freely. The swelling had increased in extent and sensitiveness. Pain on touch in the iliac fossa unaltered. The liver not enlarged. No jaundice, but the urine contains bilirubin.

It was not easy to decide in this case between appendicitis and empyema of the gall bladder, especially in view of the continued sensitiveness in the ileocæcal region. Yet the absence of any exudate in the region of the appendix, the confinement of peritonitic symptoms to the right hypochondrium, the bulging in that region, the presence of biliary coloring matter in the urine, the initial colic with exclusive pain referred to the epigastrium, the history of former attacks of "colic," appeared to justify the diagnosis of calculous occlusion of the cystic duct, empyema of the gall bladder, and probable perforation of the latter. Laparotomy performed by Dr. Lange, on the evening of October 9th, confirmed this diagnosis. Immediately upon opening the inflamed and œdematous peritonæum, the very tense and much-dilated gall bladder pushed into view through the wound. Upon opening this, copious purulent bile is discharged. From the neck of the gall bladder and the upper portion of the cystic duct eight quite large calculi were removed. The entire wall of the gall bladder was greatly thickened and in a state of acute inflammation, with widespread purulent infiltration. In several places necrotic patches were found which extended down to the serosa, but did not perforate. The further course of the case was uneventful. Recovery.

The peritonitis is rarely general, as there are usually adhesions with the surrounding organs (the abdominal wall, the intestines, the omentum, etc.), the result of previous local and chronic inflammation; so that when perforation takes place, the exudate is, as a rule, sacculated and limited.

The fever not infrequently has important diagnostic value. Very often the attacks of pain are not attended with any rise of temperature; in fact, in the class of cases under discussion, typical biliary colic accompanied by rigors and fever is of rare occurrence. The milder cases, which terminate in the expulsion of the calculus, usually run their course without any elevation of temperature. If the stone becomes impacted, however, if the bile is obstructed in its flow, and if ulceration or infection sets in, fever is the rule. If the case is one of mild but progressive inflammation, with or without ulceration, the type of fever is slightly remittent, gradually increasing in height. If the case is one of more severe type, high fever, up to 105° F., and even beyond this, of a distinctly intermittent character, appears, the rise often initiated by a chill.

Under these conditions especial care must be taken not to confound these cases with malarial disease, the more so as we so frequently find the spleen demonstrably enlarged in these forms of irregular cholelithiasis. Whether the enlargement of the spleen is due to the general systemic infection or is the result of disturbance in the portal system is not to be discussed here. In the majority of the febrile cases that have come under my observation it has been possible to demonstrate some enlargement of the spleen by percussion. In not a few the spleen was so much enlarged as to be easily felt at or even beyond the left arch of the ribs. Careful examination of the blood for plasmodia thus becomes imperative if we wish to be certain of our diagnosis.

In the *urine* nothing that is in any way characteristic can be made out on cursory examination. In a large number of cases, however, a distinct, though often faint bilirubin reaction is obtained, though there is a total absence of even the slightest trace of jaundice. This phenomenon may possibly be explained by the assumption that, owing to inflammatory or other morbid alteration in the structure of the mucous membrane of the gall bladder, some bile is absorbed there and finds its way into the circulation, but in quantities so minute as to produce no visible discoloration of the skin or scleræ, and to be detected in the urine only by means of Gmelin's test. Accordingly, it is self-evident (if this hypothesis is correct) that this reaction will be obtained only when the gall bladder contains bile and when its coats are not so far degenerated and diseased as to be incapable of absorption. We could not, therefore, expect the reaction when the gall bladder is atrophied, shrunken, or coated with calcareous deposits, when there is hydrops, empyema, etc. Nevertheless, this reaction possesses a certain diagnostic value. In the absence of jaundice and in the face of doubtful and obscure symptoms which, however, seem to point in the direction of cholelithiasis, the positive result of Gmelin's test can safely be taken as corroborative of this diagnosis. On the other hand, it is evident that the absence of the reaction is of no diagnostic importance.

It would lead us too far to discuss here all those diagnostic considerations by which we are enabled to distinguish between the affection under discussion and lesions of the stomach, the intestines, the peritonæum, the kidneys, etc. I fear I have already taxed your patience. So much, I hope, is clear, that a diagnosis is not always easy, and that we must frequently be content with a balancing of probabilities. And yet, after a minute and searching physical examination, especially careful palpation, after close consideration of all obtainable data, particularly as to anamnesis, upon a precise exclusion of other lesions, it will usually be possible, at least in the majority of cases, to reach a definite conclusion. It is in just these cases that a prompt decision is often most urgently desirable with reference to our *therapeutics.* The mild cases of cholelithiasis, the "colics," which terminate with the passage of one or more small stones through the intestines, scarcely demand serious therapeutic interference. A subcutaneous injection of morphine, intelligent regulation of the diet and the general *régime,* and the use of Carlsbad waters are entirely sufficient for these cases. If, however, the attacks recur again and again at short intervals; if the calculi are not evacuated through the bowel; if the gall bladder becomes enlarged and distended; if points permanently sensitive to pressure are established; above all, if a gradually rising temperature appears, then the time for action has come. The physician should then no longer waste precious time with useless cholagogues, with opiates, and with cathartics: the time for *surgical interference* is at hand. It is not my task further to dilate upon the indications for operation upon the gall bladder and ducts; this will be the task of most competent and experienced surgeons in the course of this discussion. I merely wish to emphasize this point: I am far from advising the immediate incision of every distended gall bladder when there happens to be a temperature of 100.5° or 101° F. It is well established that all these symptoms can disappear and a return to normal conditions take place; but when there s increasing even if not very high temperature, when septic phenomena are associated with local inflammatory or infectious alterations, even though the temperature s not excessive, we should not wait for the rare occurrence of the spontaneous resolution of even these sympoms; we should not procrastinate until perforation of he gall bladder or various other viscera has taken place; until peritonitis and general sepsis have set in and an peration is forced upon us as *ultimum refugium;* we hould proceed to operative interference at once, which an now be done under more favorable conditions and will afford the patient the best chances of recovery or revent further serious damage. We should follow this lan the more since it is a well-established fact that even if spontaneous regression of these menacing sympoms occurs, it will be only temporary, and before long he process will light up again in still more serious form. hanks to the advances in surgical technic, these operaons at the present time are deprived of much of their nger.

If the general practitioner, the family physician, will nly bear in mind that there may be gallstone disease of e severest type without occlusion of the ductus chodochus and without icterus; if he will only attempt to ack in every detail the sometimes obscure and ever-rying manifestations of these diseases; if he will relegate cholagogues, cathartics, and opiates to their proper and very limited sphere; if he will become thoroughly conversant with these morbid conditions which often have such insignificant beginnings and which become menacing and dangerous so suddenly, he will turn to the surgeon at the right moment. We shall then hear less frequently of deaths from peritonitis of obscure origin, from "gastric fever," and the like; and by the close co-operation of internal medicine and surgery, an ever-increasing number of human beings will be rescued from death and from severe suffering.

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THE INDICATIONS FOR CŒLIOTOMY ARISING IN DISEASES OF THE RECTUM.

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It is universally conceded that the abdomen should be opened and an artificial anus established in certain cases of cancer of the rectum; but that cœliotomy should be done in any other cases of disease of the rectum still seems to excite a little surprise. This fact has led me to a review of my own list of cœliotomies in connection with diseases of the rectum, and to note for the benefit of others the many and various indications constantly calling for this operation in connection with that class of affections.

The least of them all is the one referred to—cancer of the rectum; and in the same category may be placed incurable non-malignant ulceration, calling just as imperatively for the formation of an artificial anus.

In a considerable proportion of cases in which an artificial anus has been formed the surgeon will be called upon at a later date to repair the injury done, provided he has used this means of cure to its fullest extent. This applies to many cases of non-malignant ulceration and to many in which the formation of the artificial anus has been only a provisional step to lessen the risks of an extirpation—which having succeeded, leaves no further excuse for the deformity. Here we come at once into the field of intestinal resection, Abbe's anastomosis, Maunsell's operation, and the rapidly disappearing Murphy button.

Again, after colostomy it occasionally happens that the prolapse of the gut through the abdominal opening is so great as to imperatively demand a second operation. The abdomen must again be opened, the gut cut across, the distal end invaginated and dropped into the pelvis, and the proximal sutured to the skin.

In resection of cancer of the rectum it is expected that the peritoneal cavity will be opened through the Kraske incision, and, should the uterus be found involved in the disease, or should sufficient disease of the annexa be revealed, they are freely exposed in the wound and can be rapidly removed with little additional shock or risk.

All of those cases of intussusception which are marked by bloody discharge and tenesmus, and those in which the intussuscipiens appears through the anus, are naturally considered by the laity as diseases of the rectum; and thus an entirely new class of cases demanding cœliotomy is opened up—cases which after the abdomen has been opened may tax all the skill of any surgeon.

A rare indication for cœliotomy will occasionally be met in cases of foreign body in the rectum. Stones, sticks of wood, bottles, etc., may be only removable after laparotomy.

Cœliotomy for diagnosis in obscure disease is a much safer proceeding than the introduction of the whole hand into the rectum—at one time advocated, now obsolete.

In extensive prolapsus recti incurable by Van Buren's method of linear cauterization, resection of the prolapsus with opening of the peritonæum and circular enterorrhaphy is the recognized procedure.

In the rare cases of rupture of the rectum, or, more properly speaking, rupture of an old prolapse of the rectum allowing hernia of the small intestine through the anus, a cœliotomy is the only treatment.

Cœliotomy is the only cure for intestino-vesical fistula in the male, and the large majority of such fistulæ in the male are recto-vesical, but "inoperable" from the rectum.

It may be well to call attention to the fact that there are three well-recognized and distinct ways of opening the abdomen in disease of the rectum—the ventral, the vaginal, and the posterior, through Kraske's incision.

The woman with an old pelvic abscess discharging through the rectum considers herself as suffering from a disease of the rectum. There may be a cure by enlarging the fistulous opening into the rectum with a dressing forceps and thus securing free drainage, or there may be no cure short of vaginal cœliotomy, evacuation of the pus, removal of the uterus and annexa, and closure of the rectal fistula; and yet to her mind the constant escape of pus through the rectum constitutes a disease of that organ for which she appeals to the man who has a reputation in that class of diseases for a cure. I may add that she usually finds it very unsatisfactory to be told that she has come to the wrong place and should have consulted somebody else who is capable of treating her.

The stricture caused by direct pressure of the exudate in an old pelvic peritonitis in a woman is absolutely incurable without cœliotomy, but it is none the less a stricture of the rectum.

To the patient a retro-displaced uterus and a prolapsed ovary, the one causing mechanical obstruction, and the other intense pain, in defæcation, constitute a disease of the rectum; and the cure lies in ventral fixation, Alexander's operation, or removal of the ovary.

The woman with large prolapsing piles due to a uterine fibroid so firmly impacted in the pelvis that the bowels can only be evacuated by cathartics, believes herself, with a certain amount of reason, to be suffering from some trouble with her rectum—all artificial boundaries between specialists to the contrary notwithstanding. The cure, and the only cure, is abdominal hysterectomy.

Appendicitis is not a disease of the rectum, but an abscess resulting from appendicitis which is discharging through the rectum is very apt to be considered by the patient as such, and the cure is through the abdomen.

The woman with the laceration through the sphincter, proctocele, cystocele, lacerated cervix, and prolapsus uteri may be entirely unconscious that she belongs to the gynæcologist, and may think that because she has incontinence of fæces there is a distinct trouble with her rectum in comparison with which all her other troubles are as nothing. The cure is in plastic surgery on the vagina and perinæum, and if necessary in vaginal hysterectomy.

An enlarged prostate is not a disease of the rectum, yet the patient often suffers more from the rectal than the vesical disturbance and applies to the rectal surgeon for relief. The way to cure is through the abdomen by suprapubic incision and prostatectomy.

All of these cases I have been in the habit of treating and trying to cure in the ways indicated, being naturally averse to admitting that any derangement of the rectum, no matter what its cause, was beyond my surgical ability or without the proper limits of my rectal work. This has always been my individual idea of the full scope of diseases of the rectum as a specialty—an idea not shared by the profession at large.

The surgical world admits all specialties and accepts them much at their own limitations and valuations. To them the "rectal specialist" has usually been a "pile doctor," and the estimate is not unjust or unfriendly, as judged by the general scope of his work. My object in writing has been not at all to discuss the propriety of this estimate, or to seek to combat it; but merely to enumerate some of the cases of rectal disease which can not be cured without recourse to cœliotomy.

18 EAST TWENTY-NINTH STREET.

The New York Academy of Medicine.—At the last meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 24th inst., the following papers were to be read: A Case of Angeioma of the Lingual Tonsil, by Dr. Jonathan Wright; Anatomical Defects in the Faucial Pillars, by Dr. James E. Newcomb; and Chronic Hypertrophy of the Lingual Tonsil, by Dr. Francis J Quinlan. Cases were to be presented and new instruments and specimens exhibited.

Hospital, Dispensary, and Ambulance Abuse.—A special meeting of the New York County Medical Association was held on Tuesday evening, February 23d, for the purpose of considering the whole question of the abuse of public charities and devising means by which it can be remedied, and the profession protected against a growing evil.

CONGENITAL ABSENCE OF OUTWARD MOVEMENT OF BOTH EYES.*

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ISAAC F., four years of age, born in the United States of German parentage, was kindly referred to me April 21, 1896, by Dr. C. S. Bull of this city, to whom I am indebted for the privilege of presenting the case. The child was brought by his mother, from whom the following history was elicited: Patient was born at full term, after a normal labor lasting three hours. No asphyxiation. Weighed twelve pounds at birth. Between the fourth and fifth months of pregnancy she was very much frightened at seeing a boy fall from the roof and killed within a few feet of where she was sitting. When eight months old the child's teeth began to appear. He talked at the ninth month, but on account of his weight did not walk until he was fourteen months old. He has never had a convulsion of any kind, and has always been in exceptional good health, escaping the infectious diseases common to infancy and childhood. His head has never been injured by a fall, and he has always been a very bright and talkative child. He sleeps well and is free from nocturnal enuresis. Toward the end of the first year he began to draw his head backward, and she then noticed that both eyes turned inward.

Status Præsens.—Patient is a large, healthy looking, well-nourished child. He has the habit of drawing his head backward and looking upward. When told to look to the right or left, he turns head and shoulders toward the side mentioned. There is convergent strabismus, more pronounced in the left eye. He is unable to move either eye outward beyond the middle line. Pupils normal; tongue protruded well; palate highly arched, of the Gothic type, without prominent torus; teeth regular and normally developed; nasopharyngeal catarrh with adenoid vegetations.

Cranial Measurement.—Circumference, 51.5 centimetres; binauricular arc, 33; naso-occipital arc, 28.6; antero-posterior diameter, 17; greatest transverse diameter, 15. It may be noted that these measurements come within the physiological variation of the fully developed adult skull. Heart and lungs normal; no evidence of rhachitis; examination of urine negative. Other than the Gothic palate there are no so-called stigmata of degeneration present. When I first saw the patient I was inclined to think there was considerable tonic spasm affecting both interni, and therefore reserved my opinion until both eyes were thoroughly atropinized and kept in this condition for some time, and a full correction of the hypermetropia accomplished. This was done by Dr. Bull, who found 2.50 dioptres with the ophthalmoscope, and the boy has been wearing suitable spectacles ever since. He returned to me for further examination in November. The backward movements of the head had very much diminished in extent and frequency, and the convergence of the eyes had materially decreased. The pupils are equal in size and react normally to light and in efforts at convergence. While the *right* eye converges, the *left* is almost in parallelism. This condition varies from time to time during the examination. There is convergent concomitant squint, which is more marked in the *right* eye, with which he seems to "fix." Stereoscopic vision is present.

When tested with the stereoscope, the right figure being a perpendicular and the left a horizontal line, each one inch in length, and asked: "Tell me what you see?" he answers, without any hesitancy, "A cross." As he does not know the alphabet, other tests were not made. In all probability stereoscopic vision is not constant, but only of occasional transient duration. There is slight lateral oscillation of the right eyeball when he is asked to look with the right eye (the left being covered) at an object held about two feet distant. He is unable to move either eye outward beyond the middle line. When the head is held perfectly straight and he is told to look at a small object moved in the *right* temporal field (both eyes being uncovered) the *left* eye deviates inward, the inner border of the cornea just reaching the internal canthus. In looking at the same object in the *left* temporal field, the *right* eye turns inward to the same degree.

The theory is generally accepted that the innervation for the conjugate action of the eyes reaches the external rectus first, and is thence transmitted to the internus of the other eye. When the patient before you is instructed to look toward the *right*, the impulse is followed by contraction of the *left* internus *only*, and a deviation of the *left* eye inward. When told to look toward the left side, it is followed by contraction of the *right* internus and a consequent deviation of the *right* eye inward. Although there is absolutely no action of either externus, it seems to me, as a result of the foregoing examination, that conjugate action is not completely abolished, being partly performed by the respective interni. In testing each eye separately, the same result is obtained. Power of convergence is preserved, but incomplete in the left eye.

As the child's faculty of attention is somewhat lacking, and owing to his disposition to "fix" with the *right* eye, the latter test is attended with difficulty. However, when he is directed to look steadily at a small object held about three feet distant, the object being slowly brought within one inch of the eyes, both eyes converge simultaneously, but are maintained in this position for a moment only. In looking downward there is no abnormal convergence of the optic axes. When the *right* eye is voluntarily moved toward the left side there is no convergence of *left* eye. The same obtains, *mutatis mutandis,* when the left eye is similarly tested. All other movements of the eyes are normally performed. This report represents the result of at least six examinations extending over a period of two weeks. There is no indication of any abnormity in the domain of other cranial nerves. In view of the fact that cases of this type have usually been associated with bilateral facial palsy, an electrical examination was made of the apparently normal facial nerves and muscles, with the following negative result: Both nerves and muscles were found to react normally to a weak faradaic current. On account of the child's resistance to further tests, none were made. The parents of this child are healthy and without discoverable signs of syphilis, alcoholism, or eye defect. No consanguinity. There are six children in the family, the eldest being ten years and the youngest ten weeks old. I have personally examined them all. They are healthy and well developed mentally and physically, and their eye muscles act normally. I spent thirty minutes studying the action of the baby's eyes, but could not succeed in getting any movement of either eye outward.

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* Read before the New York Neurological Society, November 3, 1896.

There is no strabismus. The child being so young, I am unwilling to lay much stress upon the result of this single examination, but shall await further opportunity.

In 1895, Kunn, of Vienna, published a paper entitled A Contribution to the Study of Congenital Defects in the Movements of the Eyes,[*] in which he analyzes seventy-three cases recorded in medical literature, several of which will be referred to in the present article. They represent various anomalies, such as bilateral ptosis, imperfect convergence, paralytic conjugate deviation, partial or general ophthalmoplegia externa, and bilateral absence of outward movements. A number of additional cases have since been reported by other writers. Of these seventy-three cases there were forty-two in males and thirty-one in females. The age at time of observation ranged from nine months to fifty-three years. Only thirteen were studied during infancy. In nine cases the eye defect was limited to the absent movement of the externi, and with but few exceptions this was associated with bilateral facial paralysis, clinically, of the nuclear or infranuclear type.

He concludes that thus far the demonstrable anatomical changes in the motor mechanism do not satisfactorily explain the condition.

Combined with these ocular anomalies, other malformations are usually present, such as absence of the caruncula lacrymalis, remarkably large projecting ears, bifid uvula, webbed fingers or toes, or other signs of arrested or defective development. Judging from my own study of the literature and the cases thus far reported, uncomplicated congenital absence of outward movement of both eyes has been comparatively rarely observed.

The only corresponding case is that of MacKinlay.[†] The patient was a girl sixteen years of age. There was convergence of both eyes, and absolute inability to move the cornea beyond the middle line when directed to turn the eye outward. Perfect action of all other ocular muscles. No diplopia. Fundus healthy. Youngest of six children—all living and free from ocular defects.

Harlan [‡] has also briefly narrated a similar case.

Lamhofer and Möbius [#] refer to an idiotic male child, nine months old, with paralysis of both externi and convergence of both eyes.

Günsberg [||] reports the case of a female child, seven years of age, with paralysis of both externi. Three other members of the same family had defective ocular movements.

Kunn [△] observed a male child, one year old, in whom there was paralysis of both externi and pronounced convergence. Otherwise it was well developed and healthy.

Other instances of bilateral abducens paralysis associated, however, with bilateral facial paralysis have been reported by various writers. Some of you may recall the case so ably presented before this society in December, 1889, by Dr. A. Schapringer of this city, under the name of congenital bilateral pleuroplegia.[*] The patient was a girl, eight years of age, of good mental development. Both externi were evidently paralyzed, or they did not exist, as neither eyeball could be moved beyond the middle line toward the temporal side. The inner straight muscles were also paretic. There was no convergent strabismus, but complete loss of conjugate action toward the left side. Neither internus would act separately, although the power of convergence was preserved. One eye was emmetropic and the other myopic 3 D. This condition was associated with bilateral facial paralysis and muscular paresis affecting the motor trigeminus and hypoglossal nerves. There was also congenital deformity of the left index finger and the thorax (*Trichterbrust*) and bifid uvula. Dr. Schapringer looked upon the case as one of arrested development affecting the nuclei.

Other cases of this character that have been reported are the following:

Graefe: [†] A man, aged twenty years. Bilateral abducens paralysis; visual lines parallel; vision and fields normal; right eye myopic; left emmetropic; left facial paralysis and right facial paresis; loss of taste and smell; epileptiform attacks.

Harlan: [‡] A lad, aged eighteen years. Bilateral abducens paralysis. Pronounced convergence. Vision, right $=\frac{1}{8}$; left $=\frac{1}{5}$. Refraction normal. Bilateral facial paralysis.

Chisholm: [#] A woman, aged thirty-five years. Bilateral abducens paralysis; pronounced convergence; absence of both carunculæ lacrymales; bilateral facial paralysis.

Möbius: [||] A man, aged fifty years. Bilateral abducens paralysis. Paresis of both inferior recti; visual lines parallel; myopia 20 D.; posterior staphyloma; bilateral facial paralysis; webbed fingers.

Fryer: [△] A boy, aged sixteen years. Bilateral abducens paralysis. Visual lines parallel; conjugate lateral movements impossible; myopia 10 D.; bilateral facial paralysis; congenital absence of right hand, and incomplete development of the entire right upper extremity.

Bernhardt [◊] has reported a very interesting case, with autopsy, which bears some analogy to those just cited.

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[*] Deutschmann's *Beiträge zur Augenheilkunde*, 1895, Heft xix.

[†] *Transactions of the Ophthalmological Society of the United Kingdom*, 1887, p. 281.

[‡] *Transactions of the American Ophthalmological Society*, 1885, p. 48.

[#] Ueber infantilen Kernschwund. *Münch. med. Woch.*, 1892.

[||] *Klin. Monatsbl. f. Augenh.*, 1889, p. 263.

[△] Deutschmann's *Beiträge f. Augenh.*, 1895, Heft xix.

[*] *New York. Med. Monatsschr.*, December, 1889.

[†] *Handb. d. gesam. Augenh*, 1880, Bd. vi.

[‡] *Transactions of the American Ophthalmological Society*, 1881, p. 216.

[#] *Archives of Ophthalmology*, 1882, p. 323.

[||] *Münch. med. Woch.*, 1888, 6 and 7.

[△] *Annals of Ophthalmology and Otology*, 1892, p. 82.

[◊] *Neurolog. Centrlbl.*, 1890, p. 420.

The patient was a male child five months old. The parents were healthy as well as the four other children. Labor was easy and rapid. At the time of birth there was a malformation of the upper border of the left orbit, and a complete right peripheral facial paralysis. Five or six weeks later, almost complete paralysis of entire right trigeminus and right keratitis. The right eye deviated inward and could not be turned outward. The left eye also deviated inward, but could be moved outward. The child died of bronchitis. Post-mortem examination was confined to the skull and its contents. There was superficial softening of the right half of the pons, and complete softening involving the lower right corpora quadrigemina. A large number of sections were made through the corpora quadrigemina, pons, and medulla, which showed that *the nuclei were not diseased.* The contents of the orbit were not examined, neither were the nerve trunks.

Heuck * has published a series of cases occurring in one family. These included the mother and three of her children. The mother, who was fifty-three years of age, had complete bilateral ptosis. Both eyes were constantly directed downward. There was no upward, downward, r outward movement of either eye. The three children xhibited very similar defects, but of unequal degree in he two eyes. One died at the age of eighteen years of carlet fever, and an examination of the contents of the rbit was made, with the following results: On the right ide there was a very delicate ill-developed levator pal-ebræ, two millimetres broad. On the left side no trace f the muscle could be found. The muscles attached to he eyeball, with the exception of the two internal recti, ere inserted into the sclerotic in abnormal positions. he superior, inferior, and external recti were inserted so far back, the displacement of some of them being much as 2.5 millimetres. The superior oblique mus-e in each eye, instead of its usual position to the outer de of and posterior to the insertion of the superior rec-s, was inserted to the inner (nasal) side of the superior ctus, and reached a short distance anterior to it. The ferior oblique muscles were nearly normal in their in-rtion. In addition to this displacement there was con-derable alteration in the length of most of the mus-es. Nearly all were too short, the difference being as uch as ten and eleven millimetres in the case of the ferior recti. The orbital nerves were normal.

In the foregoing case the faulty insertion of the mus-s and their incomplete development adequately explain e defective motility. The nerve nuclei were not ex-ined.

Mauthner † says that the absence of eye muscles in mpletely developed eyes has been anatomically demon-ated by Seiler, in whose case there was absence of h obliques in the right eye, and both obliques, together with the superior rectus, in the left eye. He is of the opinion that congenital abducens paralysis is frequently due to absence of the muscle.

Gowers * briefly refers to this class of cases as "infantile oculo-facial palsy," and concludes that "nothing definite is known of its causation, but its history suggests defective vital endurance in the nuclear structures."

Under the classification of Defective Development of Cranial Nerve Nuclei, Sachs † includes congenital ptosis, ophthalmoplegia externa, partial or complete, facial paralysis, and all those patients in whom there is a congenital defect of a unilateral or bilateral character implying insufficient innervation of the muscles governed by any of the cranial nerves. He says: "I should therefore prefer to give all these diseases the proper designation of congenital nuclear palsy."

Möbius, who has carefully studied this subject from a neurological standpoint, published his views in 1892 in a series of articles in the *Münchener med. Wochenschrift* (Ueber infantilen Kernschwund). He assumed that these conditions of defective motility were due to primary muscular atrophy, and thought it probable that all of these closely related clinical conditions were also related anatomically. Inasmuch as the bilateral facial abducens paralysis and the exterior oculo-motor paralysis could only be of nuclear origin, it presupposed a nuclear lesion for the other forms. Nevertheless, he preferred the term "infantilen Augenmuskelschwund." He says further that it is, moreover, probable that the muscular atrophy would be the same, whether the nucleus, the nerve, or the muscle was primarily diseased. In early cases the neurotic should be differentiated from the primary atrophy.

In a subsequent article,‡ as a result of learning of a number of other cases with which he was unfamiliar at the time of his first publication, he admitted that the eye muscles may be completely intact in the congenital paralyses, thus materially changing his former argument.

In reviewing Heuck's case, Möbius is inclined to believe that the condition of the muscles, as well as their abnormal insertion, might be the effect of a previous nuclear lesion, by means of which the peripheral segment did not attain its proper development. He concludes that probably the entire neuromuscular apparatus was arrested in its development from the very beginning (page 169).

As there are no cases recorded in which atrophy or absence of nerve nuclei has been demonstrated, the conclusions of Möbius, Gowers, Sachs, and others are thus far only hypothetical. There being such a diversity of opinion in regard to this matter, it is not surprising that all recent writers agree that the terms abducens paralysis, or nuclear abducens paralysis, are misleading and inaccurate, and while they may be correctly applied in some, they are not applicable in all cases. Consequently, the *condition* is often described under the designation "congenital defective movement of the eyes."

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* *Klin. Monatsbl. f. Augenh*, July, 1879.

† *Augenmuskellähmungen*, 1886, p. 464.

* *Diseases of the Nervous System*, 1893, vol. ii, p. 197.

† *Nervous Diseases of Children*, p. 604.

‡ *Neurolog. Beiträge*, Heft iv, p. 168.

In the somewhat analogous condition of infantile or congenital atrophy of the facial muscles, with or without involvement of the eyes, Schultze,* Bernhardt,† Remak,‡ and others who have reported such cases have raised the question whether this is not an abortive form of juvenile muscular atrophy.

Möbius is inclined to believe that in exceptional cases the eye muscles are affected in the course of progressive dystrophy, but that such cases should not be classified in the category of defective eye muscles.

Kunn,# however, thinks that progressive muscular dystrophy is a disease which may affect the eye muscles alone.

Unfortunately, most of the recorded cases have been observed in adult life, and in some instances the history as to the time of the first appearance or recognition of eye defect was very unsatisfactory. From a study of the literature it will be seen that these congenital defects are almost always due to developmental anomalies affecting the ocular muscles.

In the very few cases which have been examined post mortem there has been found either complete absence of the muscle or muscles in question, or the muscles have been present, ill developed or attached to the eyeball in abnormal positions. While such data exist which seem to explain the pathology and morbid anatomy in individual cases, yet the same would not be applicable in all.

The doctrines of neuro-pathology teach that fibrous degeneration and complete absence of muscle may be due to a primary nuclear atrophy, while, on the other hand, a nuclear atrophy may result from a loss of function or atrophy of the muscle. It is, however, a significant fact, so far as I can ascertain, that disease of the nuclei in these cases has never been demonstrated.

Until careful post-mortem histological study is made in a number of cases, extending from the nerve nuclei to their ultimate termination (preferably during infancy or childhood), our conclusions as to the pathology of such "congenital defective ocular movements" must remain *sub judice*.

In the absence of any pathological condition of the nervous system, the case presented may be looked upon as one of congenital arrest of development affecting the external recti muscles, or possibly a faulty insertion of these muscles.

959 Madison Avenue.

Therapeutical Notes.

Salubrol.—This is a new substitute for iodoform described by Dr. M. Silber, of Breslau (*Deutsche medicinische Wochenschrift*, December 24, 1896; *Therapeutische Wochenschrift*, January 3, 1897), as made by the action of bromine on a compound of methylene and antipyrine. It is stable under ordinary circumstances, but on coming in contact with organic matter it gradually gives off bromine. The powder, applied to the skin, sometimes gives rise to a burning pain, but a twenty-per-cent. gauze has no irritating action. Salubrol has been given to animals subcutaneously in daily amounts of a hundred and fifty grains without their manifesting any poisonous action.

Iodine in the Treatment of Dysentery.—Dr. L. L. Kotschorowsky, director of the military hospital in Smolensk (*Semaine médicale*, 1896, No. 62; *Wiener klinische Wochenschrift*, January 28, 1897), has somewhat modified the iodine treatment of dysentery by giving iodized starch internally, with the result of curing the disease rapidly in more than a hundred cases. He employs a mixture of equal parts of iodized starch, oil of cinnamon, and oil of fennel, of which he gives about a grain four times a day. At the same time he uses irrigations with a solution of iodized starch to which are added a few drops of chloroform, tincture of iodine, and oil of cinnamon.

A Liniment for Hæmorrhoids.—The *Progrès médical* takes from the *Semaine médicale* the following formula, which is attributed to L. H. Adler:

℞	Fluid extract of hamamelis,	each. 4 parts;
	Fluid extract of hydrastis,	
	Compound tincture of benzoin,	
	Tincture of belladonna	1 part;
	Olive oil containing five per cent. of carbolic acid	8 parts.

M.

The Treatment of Aphthous Stomatitis.—In the *Wiener medizinische Blätter* for February 4th there is published the concluding portion of a long article on aphthous stomatitis, by Dr. Amadeo Levi, of Venice. He gives the following formulæ of solutions to be applied to the affected parts four or five times a day:

(1) ℞	Borax	4 parts;
	Tincture of myrrh	8 "
	Syrup of mulberries	60 "

M.

(2) ℞	Borax	4 parts;
	Tincture of benzoin	2 "
	Distilled water	10 "
	Syrup	20 "

M.

(3) ℞	Sodium phosphate	10 parts;
	Orange-flower water	25 "
	Honey of roses	50 "

M.

(4) ℞	Calcium chlorate	2 parts;
	Honey	20 "

M.

(5) ℞	Potassium chlorate	3 parts;
	Distilled water	60 "

M.

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* *Neurol. Centrlbl.*, 1892, No. 14.

† *Ibid.*, 1894, No. 1.

‡ *Ibid.*, 1894, No. 7.

# Deutschmann's *Beiträge zur Augenheilkunde*, 1895.

THE
NEW YORK MEDICAL JOURNAL,
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NEW YORK, SATURDAY, FEBRUARY 27, 1897.

THE STUDY OF EDIBLE AND POISONOUS FUNGI.

We are glad to learn, through the newspapers, of the formation of the Mycological Club in New York, which, it is said, is to devote itself to the study of the larger fungi—mushrooms and toadstools—that are to be found in the public parks and on unimproved land within and about the city. The club is small at present, but there is every reason to expect that it will soon have a large membership. It seems to have been started by a lady who had become interested in the subject by observing the work of a club of the same name that was organized in Boston a year or two ago. The Boston club is said to have started with seven members, but to have over two hundred at the present time. At its meetings lectures are given and specimens are shown.

According to an account published in last Sunday's *Sun*, the lady in question is Miss Bedford, of the Pratt Institute and the New York Cooking School. Her club was recently started with eight members, and now has twenty-four. Its work is to embrace the identification and classification of the larger fungi of the United States, for which purpose the members will make expeditions into the parks of the city and into the suburban districts in quest of specimens. Public exhibitions of specimens will be given, and in connection with these exhibitions there will be explanations and demonstrations of the differences between the edible and the poisonous varieties. Instruction will be given n the art of preparing, cooking, and serving mushrooms, and the endeavor will be made—successfully, we do not doubt—to make the community recognize the great value of the almost neglected supply of agreeable nd nourishing food to be found in our spontaneous growth of mushrooms.

Such local mycological clubs as Miss Bedford's and ts Boston prototype seem sure to succeed not only in nstructing and entertaining its members, but also in upplementing most efficiently the efforts that are made rom time to time by individual botanists and in government publications to disseminate knowledge of this most important subject. Those of the members who go nto the country for a portion or the whole of the summer—and doubtless that number includes practically he whole club—will naturally continue their mycological work in the regions in which they are sojourning, and so not only add to their own stock of knowledge, but impart some of it to the inhabitants. We hope the club will take up also the subject of the cultivation of mushrooms. Experiments in this line have generally, we think, ended in disappointment, but that must be because there is something yet to be learned, and that can be learned, in the art of raising mushrooms. But, independently of this, the club will undoubtedly be of great benefit.

THE PROGRESS OF RÖNTGEN-RAY PORTRAITURE.

Some notable detail work in Röntgen-ray pictures seems to have been achieved recently by M. Remy and M. Contremoulin, a short account of which, by M. Marey, appears in the *Comptes rendus hebdomadaires des séances de l'Académie des sciences* for February 1st. Taking a hint from the histologist's recent researches on the nervous system, they have succeeded, with human cadavers and with dead frogs, in causing a precipitate of silver chromate to form on the surface and penetrate into the tissues, with the result of bringing muscles, ligaments, and tendons into a condition to show plainly in Röntgen pictures.

In a preparation of the hand, the muscles of the thenar and those of the hypothenar eminence are seen, characterized respectively by the oblique and transverse direction of their fibres. Both the muscular and the tendinous portions of the interosseous muscle which is inserted into the outer tubercle of the first phalanx of the index, as well as of the two interossei of the medius, are quite distinctly shown. The muscles of the thenar eminence may be followed to their insertions into the metacarpal and carpal bones.

The bones themselves are more distinctly shown than is usually the case; the sesamoids are particularly clear in outline, so that they are disclosed in localities where they were before not known to exist, as between the two phalanges of the thumb. On close observation, even the tendons of the superficial and deep common flexors are to be seen. The deep flexor of the index contains a sesamoid bone.

In the frog, prepared in the same way, not only the muscles, but even the fasciculi are plainly visible. Moreover, in this animal, prepared entire, Remy and Contremoulin have obtained pictures of the crystalline lens and of the tunics of the eye.

MINOR PARAGRAPHS.

DR. DEUTSCH'S NEW BOOK OF INSTRUCTION IN GERMAN.

We presume that many of our readers have profited by Dr. Solomon Deutsch's *Medical German.* Those who wish to go deeper into the language will find great assistance in the new edition of the same author's *Practical Method for Easy and Thorough Self-instruction in the German Language*, published by Brentano. It is not a book aiming to enable the student to chatter in German; diligent study of it will result in a radical knowledge of the language. Particularly conducive to this end are the frequent references to the Anglo-Saxon and other equivalents of German words, the exposition of Grimm's law, the explanations of how certain words have come to have their present meaning, and the analyses of words. We have noticed a few errors of proof-reading, and we think there are some defects in the section on pronunciation, but such shortcomings it is almost impossible to avoid. Nobody should expect to learn pronunciation thoroughly from a book, but the student of this book can come very close to doing so, and he can "set" his pronunciation, so to speak, from time to time, that is, whenever he comes in contact with a well-bred German, as a mariner sets his chronometer when he reaches a place where he can depend on getting correct time. We regard the book as one of the most valuable aids to the student of German.

THE COMPULSORY REPORTING OF CASES OF TUBERCULOUS DISEASE.

At the last meeting of the Medical Society of the County of New York, on Monday evening, February 22d, the committee on hygiene made a report earnestly recommending physicians to avail themselves of the offer of the bacteriological department of the city board of health to aid in the early diagnosis by examinations of sputa, and approving of the compulsory reporting of cases of pulmonary tuberculosis, but with the important proviso that the board's inspectors shall be forbidden to visit the patients or to have any communication with them. The committee add that they believe the physician in attendance is capable of giving all the necessary instructions. The report was laid over for discussion.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 23, 1897:

DISEASES.	Week ending Feb. 16.		Week ending Feb. 23.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	11	3	6	1
Scarlet fever	160	6	176	9
Cerebro-spinal meningitis	5	6	7	4
Measles	173	4	131	11
Diphtheria	212	46	188	34
Croup	7	7	11	4
Tuberculosis	199	126	164	135

Self-protection by the Medical Profession in the District of Columbia.—The following recommendations were adopted by the Medical Association of the District of Columbia, on February 16, 1897:

1. That every institution for medical charity shall require from every applicant for relief in a hospital or dispensary a written certificate to be obtained as hereinafter provided. Emergency cases are to be excepted from the operation of this rule.

2. That such certificate be obtained from physicians to the poor, the Board of Associated Charities, and any registered physician.

3. That sick and injured persons found upon the streets, in the stations, or elsewhere, who require immediate treatment shall be carried to the Emergency Hospital, or the nearest hospital having an emergency service, or to their homes, if so directed by the patient or his friends.

4. That emergency patients shall not be detained longer in such institutions than the necessity of the case imperatively demands, but shall be discharged from the service and sent to their homes or to some public hospital, as the patient may elect.

5. That members of this association shall be entitled to the privilege of attending private patients occupying private rooms in any of the public hospitals of this city.

6. That in future the members of the medical staff of hospitals, when attending medical or surgical cases in private pay rooms, shall insist upon proper payment for their services except in the case of patients who are clearly unable to pay for the same.

7. That whenever the medical staff or a majority thereof of a hospital or dispensary resigns, and when, after due hearing, this association finds that the resignations were for just and sufficient cause, it shall be forbidden for any member of this association to accept a position on the staff of said hospital or dispensary.

8. That whenever one or more members of the medical staff of a hospital or dispensary are dismissed, and when, after due investigation, this association finds that such dismissal was without just and sufficient cause, it shall be forbidden for any member of this association to fill the vacancy created thereby.

9. That complaints made under rules 7 and 8 shall be made in writing to the standing committee, which after due consideration shall report its findings to the association.

The Southern Section of the American Laryngological, Rhinological, and Otological Society will meet in New Orleans on Wednesday, March 3d, under the presidency of Dr. William Scheppegrell. The programme includes the following titles: Address of Welcome, by Dr. John B. Elliott, of New Orleans; The Operative Treatment of Suppurative and Non-suppurative Middle-ear Inflammations, by Dr. E. B. Dench, of New York; Some Remarks upon Tonsil Operations with Especial Reference to Hæmorrhage, by Dr. A. W. Calhoun, of Atlanta; The Surgery of the Inferior and Middle Turbinated Bodies and Bones, by Dr. Robert C. Myles, of New York; Some Amusing Instances of Nasal Reflex, by Dr. Arthur G. Hobbs, of Atlanta; A Clinical Report of Interesting Cases (Two Cases of Tracheotomy for Foreign Body in the Trachea; Cicatricial Atresia of both Choanæ), by Dr. Augustus McShane, of New Orleans; The Classification and Nomenclature of Acute Diseases of the Tonsils, by Dr. T. C. Evans, of Louisville; Sero-mucous Cysts of the Alæ of the Nose, by Dr. Norval H. Pierce, of Chicago; The Relation between Nasal and Mental Diseases, by Dr. D. Ziem, of Dantzig, Germany; Turbinectomy; Analysis of One Hundred Cases, by Dr. T. H. Stucky, of Louisville; The Necessity of the Complete Removal of the Tonsils whenever Diseased or Hypertrophied, by Dr. Louis J. Lautenbach, of Philadelphia; Spurs of the Nasal Sæptum as Factors in Diseases of the Respiratory Tract, by Dr. Edward F. Parker, of Charleston, South Carolina; The Treatment and Prognosis of Catarrhal Deafness in Young Children, by Dr. J. Aloysius Mullen, of Houston, Texas; and The Treatment of Laryngeal Tuberculosis with Cupric Interstitial Cataphoresis, with a Report of Cases; the Advantages of Direct Laryngoscopy in this Method, by Dr. W. Scheppegrell, of New Orleans.

The Successful Candidates in the Recent Marine-Hospital Service Examinations.—At the recent examination for the appointment of assistant surgeons in the United States Marine-Hospital Service, thirty candidates were examined and six of them had an average sufficient to entitle them to receive commissions. The successful candidates were, in order of standing, Dr. Taliaferro Clark, of Washington, Dr. Hill Hastings, of Elizabethtown, Kentucky, Dr. C. H. Lavinder, of Lynchburg, Virginia, Dr. John McMullen, of Baltimore, Dr. S. B. Grubbs, of Brooklyn, and Dr. H. C. Russell, of Philadelphia. Three of the successful candidates are graduates of the University of Virginia.

The Western Surgical and Gynæcological Association, we learn from the *Kansas City Medical Index*, held its sixth annual meeting in Topeka on Monday and Tuesday, December 28th and 29th. Officers for the ensuing year were elected as follows: President, Dr. Joseph Eastman, of Indianapolis; vice presidents, Dr. D. S. Fairchild, of Clinton, Iowa, and Dr. B. B. Davis, of Omaha; secretary and treasurer, Dr. Herman E. Pearse, of Kansas City; members of the executive board, Dr. L. Schooler, of Des Moines, Dr. M. B. Ward, of Topeka, Dr. T. J. Beattie and Dr. C. Lester Hall, of Kansas City, and Dr. J. P. Lord, of Omaha. The meeting seems to have been very profitable and enjoyable.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 14 to February 20, 1897:*

O'Reilly, Robert M., Major and Surgeon, will be relieved from duty as attending surgeon in Washington, D. C., by Hall, William R., Major and Surgeon, and upon the expiration of his present leave of absence will proceed to Fort Wayne, Michigan, for station, relieving Brown, Justus M., Lieutenant Colonel and Deputy Surgeon General. Lieutenant-Colonel Brown, on being thus relieved, will proceed to New York, and upon the retirement of Alexander, Charles T., Colonel and Assistant Surgeon General, on May 3, 1897, will take charge of the Medical Supply Depot in that city.

Wales, Philip G, Captain and Assistant Surgeon, is granted leave of absence for four months, to take effect upon his relief from duty at Fort McPherson, Georgia.

Promotion.

Banister, John M., Captain and Assistant Surgeon, to be Surgeon with the rank of Major.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending February 20, 1897:*

Rosenbleuth, J. C., Assistant Surgeon. Detached from the U. S. Steamer Raleigh and ordered to the U. S. Steamer Massachusetts.

Whiting, R., Surgeon. Placed on the retired list. February 15, 1897.

Society Meetings for the Coming Week:

Monday, *March 1st:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vermont, Medical Association; Providence, Rhode Island, Medical Association (annual); Hartford, Connecticut, Medical Society; Philadelphia Academy of Surgery; South Pittsburgh, Pennsylvania, Medical Society; Chicago Medical Society.

Tuesday, *March 2d:* New York Neurological Society; New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Herkimer (annual—Herkimer), N. Y.; College of Physicians of Philadelphia (Section in Otology and Laryngology); Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Maine, County Medical Association (Lewiston); Essex, Massachusetts, South District Medical Society (annual—Salem); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *March 3d:* New York Academy of Medicine (Section in Public Health); Harlem Medical Association of the City of New York; Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; College of Physicians of Philadelphia; Penobscot, Maine, County Medical Society (Bangor); Bridgeport, Connecticut, Medical Association; Southern Section of American Laryngological, Rhinological, and Otological Society (annual—New Orleans).

Thursday, *March 4th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *March 5th:* Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

Saturday, *March 6th:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Answers to Correspondents:

No. 454.—According to our latest information, the following are the requirements for the practice of medicine in the different States: An examination before a State medical examining board must be passed in Alabama, Arkansas, California, Colorado, Delaware, Florida, Illinois, Indian Territory, Iowa, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, Montana, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and West Virginia. Registration with the county clerk is required in Arizona, Connecticut, Georgia, Idaho, Indiana, Kansas, and Wyoming. In the District of Columbia the diploma must be indorsed by the committee of the medical society of the District. In Kentucky an indorsement must be made by the State board of health; also in Louisiana, Nebraska, and Oklahoma. New Hampshire and Rhode Island require only a diploma from a medical college in good standing.

Births, Marriages, and Deaths.

Married.

Balding—Clark.—In Evanston, Illinois, on Tuesday, February 23d, Mr. William Thomas Balding and Miss Caroline Austin Clark, daughter of Dr. Albert B. Clark.

Bass—Bowen.—In New Orleans, on Tuesday, February 9th, Dr. Virgil M. Bass, of Boyce, Texas, and Miss Fannie I. Bowen.

Dunham—Balestier.—In New York, on Thursday, February 18th, Dr. Theodore Dunham and Miss Josephine Balestier.

McKeown—Graham.—In Long Island City, N. Y., on Sunday, February 21st, Dr. Patrick H. McKeown and Miss Clara Graham.

Ward—Hass.—In Mobile, on Tuesday, February 9th, Dr. William G. Ward and Miss Carrie A. Hass.

Died.

Brown.—In Providence, Rhode Island, on Thursday, February 18th, Grace V. Brown, wife of Dr. J. Edmond Brown.

Creamer.—In Brooklyn, on Saturday, February 20th, Dr. Henry A. Creamer, aged twenty-five years.

Dixon.—In Worcester, Massachusetts, on Monday, February 15th, Dr. R. B. Dixon, of Boston.

Droesch.—In Brooklyn, on Friday, February 19th, Dr. Joseph Louis Droesch, aged forty-one years.

Gilfillan.—In Bowdon, Cheshire, England, Mrs. Eliza Gilfillan, mother of Dr. William Gilfillan, of Brooklyn.

Jimenez.—In New York, on Wednesday, February 17th, Dr. Saturnino M. Jimenez.

Preston.—In Patchogue, N. Y., on Tuesday, February 16th, Dr. William S. Preston, in the sixty-seventh year of his age.

Wood.—In Guilford, N. Y., on Saturday, February 20th, Dr. Willoughby I. Wood, of Brooklyn, in the twenty-eighth year of his age.

Letters to the Editor.

THE LICENSING OF SPECTACLE-FITTERS IN THE STATE OF NEW YORK.

212 Franklin Street, Buffalo, *February 22, 1897.*

To the Editor of the New York Medical Journal:

Sir: Should no other statement be made than that in your editorial of last week, that "nobody appeared against the bill to regulate the practice of optometry" at the hearing mentioned, "save Dr. Wynkoop, the secretary of the Medical Society of the County of Onondaga, and Dr. Marlow, representing the Syracuse Academy of Medicine," the impression might remain that there was but little opposition to this bill. At the hearing referred to, the existence of the bill was scarcely known, but at the second hearing the situation was different. The fact is, there is a widespread and earnest opposition to it, and its opponents were present at the second hearing in far greater numbers than could be heard in the allotted thirty minutes; and it came from both ends of the State, as well as from its central part.

Buffalo sent representatives in the persons of Mr. J. W. Jarvis, of the Fox Optical Company, and Mr. W. H. White, of the Buffalo Optical Company. Both these gentlemen spoke against the bill. In addition to this, protests were placed before the committee from the Buffalo Academy of Medicine, from many physicians individually, and from nearly all the leading opticians of this city. The writer sent a somewhat detailed statement of reasons why this bill should not become a law, emphasizing the fact that "optometry" could not be properly done and applied without medical knowledge, and that it was purely a medical subject.

From New York city, according to the reports of the Buffalo gentlemen who were present at the hearing, there were Mr. Meyrowitz and other opticians, Dr. Van Fleet, and another physician, who spoke in opposition to the bill. And several others were present who desired to speak, but could not because of the limitation of time. Other opposition emanated from New York which did not appear in speeches.

It is a matter of congratulation that Onondaga County and Syracuse were so ably represented at the first hearing. And my friend Dr. Marlow will rejoice that he and Dr. Wynkoop are not alone in opposing this pernicious legislation, but that he is strongly supported, both by physicians and by legitimate opticians throughout the State.

It is to be hoped that this united opposition has inflicted such a blow on this bill that it will never see light again. If it is not killed, however, let all right-minded persons continue the battle till it succumbs.

Furthermore, if any legislation is to be attempted, let it be to stop this pretentious and deluding practice of "testing eyes" by those who are not qualified—and only those are qualified who possess a good knowledge of medicine, first, and such equipment, afterward, as is acquired by prolonged study and practice in ophthalmic clinics at home and abroad.

Let us make no compromise with "refracting" opticians by granting them the privilege of indulging in their mischievous practice on persons over a certain age. They know no more about eyes which are over twenty-five years of age than they do about those which are under; and the eyes and vision of persons thirty-five years of age are just as precious as those of persons of twenty. It is better to educate the public than to inflict a wrong upon it.

A presbyope who is not astigmatic and who has healthy eyes and normal vision may, himself, select proper glasses; but he who needs to have his eyes "tested" or examined has some abnormity or disease, and the optician, or "optometric" specialist, has no more business with him than a druggist has with a case of talipes equinus or of heart disease.

Alvin A. Hubbell, M. D.

New York, *February 22, 1897.*

To the Editor of the New York Medical Journal:

Sir: In your issue of February 20th, in an article entitled The Licensing of Spectacle-fitters in the State of New York, you say: "It is to be regretted that at the hearing on Thursday of last week (meaning the 11th inst.) nobody appeared against the bill to regulate the practice of optometry in the State of New York, save Dr. Wynkoop, the secretary of the Medical Society of the County of Onondaga, and Dr. Marlow, representing the Syracuse Academy of Medicine, while the opticians were represented by counsel."

It seems, as this statement, while true, is misleading, that an explanation should be made. The facts are these: The so-called "optometry bill," assembly bill No. 459, was introduced on January 28, 1897. The committee on legislation of the Medical Society of the County of New York at once sent a protest to the chairman of the assembly committee to which it had been referred and asked for a hearing. The clerk of the committee forwarded us a notice of a hearing on February 18th, and asked us to notify those opposed, as he did not know them. We at once began to get our forces together for the fray, supposing that the date set would be the day, but were surprised to learn on February 14th that a hearing had been held on the 11th at which the opticians were out in force, while the opposition was represented by two doctors from Syracuse. I have been unable to ascertain how they got wind of it—that the bill had been amended and reported and was on order of third reading. We immediately telegraphed to the speaker of the house protesting against this action, and begged that the bill be recommitted and that we be given a hearing. The speaker, the Hon. James M. E. O'Grady, promptly responded that the bill would be recommitted and a hearing given on the 18th. A protest to the committee on general laws brought a statement from the clerk that when he wrote us that the hearing would be on the 18th he made a mistake.

However, on February 18th we presented ourselves at the hearing before the committee on general laws, and as the result the impression is that the optometry bill will have to work hard to get through the legislature this year.

There were at this hearing Dr. Suiter, of Herkimer, and Dr. Morrell, of Yonkers, representing the Medical Society of the State of New York; Dr. Ward, Dr. Bendell, and Dr. MacFarlane, representing the Medical Society of the County of Albany; Dr. Callan, Dr. Howe, and Dr. Carhart, representing the Medical Society of the County of Westchester; and Dr. Mittendorf, representing the New York Ophthalmological Society. The Medical Society of the County of New York was also represented, and there were others whom I can not recall at present. Besides the medical men appearing to protest, there was also a delegation of opticians headed by Mr. Meyrowitz, who showed conclusively that the only men desiring the passage of this bill were the "refracting opticians," who have also become refractory.

The history of this effort to evade the medical laws of New York will make interesting reading when the battle is over; now is not the time for lengthy descriptions, but we desire again to request our medical brethren to write to their representatives, and to assure them that if they will give us their help the bill to regulate the practice of optometry in the State of New York will never become a law. Frank Van Fleet, M. D.,

Chairman of the Committee on Legislation of the Medical Society of the County of New York.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-first Annual Meeting, held in Albany on Tuesday, Wednesday, and Thursday, January 26, 27, and 28, 1897.

The President, Dr. James D. Spencer, of Watertown, in the Chair.

(*Continued from page 226.*)

Gauze Drainage in Surgical Gynæcology.—Dr. W. E. Ford, of Utica, in a paper on this subject, said that his rule was to allow the gauze to remain in the uterus for five days unless there was a rise of temperature with some pain. He did not then replace the gauze, but relied upon other measures to promote involution still further. Since he had made it a rule to curette and tampon before performing trachelorrhaphy, his results from this operation had been better. In septic metritis, he used a light gauze packing for the first forty-eight hours, unless the discharge was very abundant, when he gauze was omitted for the first few days. In cases of carcinoma of the uterus, much relief was afforded by the use of an acetanilide gauze. He had, however, earned of one case in which, after the use of this gauze packing for the control of uterine hæmorrhage, the patient had been seized with syncope, profuse sweating, nd prolonged vertigo, apparently as a result of absorpion of the acetanilide. He had also used gauze drainge without irrigation in cases of hæmorrhage into the bdominal cavity.

Dr. H. L. Collyer said that drainage from the terus could be secured if only a small strip of sterile auze was inserted, but if such a strip was allowed to emain in for more than twenty-four hours it would ause irritation.

Dr. A. Palmer Dudley said that plain gauze was ot so good as iodoform gauze, although it could not be enied that the latter did sometimes give rise to poioning. This was particularly true of gauze in which he iodoform was used in the form of the glycerite.

Observations on Abdominal and Pelvic Surgery—esults.—Dr. W. Gill Wylie, of New York, in this aper, presented the results of his hospital work in this eld during the last three years. The total number of bdominal operations was 343, with 14 deaths from all uses, or a mortality of 4.8 per cent. Of this total, 129 the operations had been done in his private hospital, ith three deaths, or a mortality of 1.61 per cent.

Absorbable Ligatures and Sutures in Pelvic and Abdominal Surgery.—Dr. Walter B. Chase, of Brooklyn, read this paper. After discussing the requisite properties of an ideal ligature and suture, the speaker called attention to the fact that catgut that had been prepared by repeated immersion in alcohol and drying, and then preserved in sealed tubes, was so hygroscopic that when placed in the tissues it became swollen and, therefore, filled up the puncture and tightened the ligature.

Puerperal Eclampsia.—Dr. William Warren Potter, of Buffalo, opened the obstetrical discussion with a paper on puerperal eclampsia. He said that the correctness of the microbic theory of puerperal eclampsia had not yet been demonstrated; the toxæmic theory furnished the best working hypothesis at present. One of the surest ways of controlling the toxæmia was to put the patient on an exclusive milk diet. When convulsions were actually present, the prompt emptying of the uterus contributed in every way possible to the preservation of the lives of both mother and child. Veratrum viride he considered both dangerous and uncertain in its action.

The Indications for, and the Technique of, the Induction of Premature Labor.—Dr. James P. Boyd, of Albany, in a paper on this topic, stated that the operation was indicated in a number of conditions—*e. g.*, placenta prævia, eclampsia, advanced disease of the heart or lungs, hydramnios, and cases in which the fœtus was dead, or where the history of previous labors showed that the fœtal head was unusually large or abnormally ossified a full term. In his opinion, the best method was by the introduction of an aseptic flexible, solid bougie. There should be the same preparation as for an abdominal operation. When inserting the bougie, the Sims's speculum should be used, and the cervix steadied with a tenaculum. The bougie should be retained in place by a light gauze packing in the vagina.

Infection of the Puerpera.—Dr. A. B. Miller, of Syracuse, read this paper. He said that puerperal infection was for the most part due to the streptococcus. The treatment resolved itself into surgical cleanliness and a technique by which the introduction of septic organisms into the parturient canal might be avoided. It should be remembered that antiseptic douches destroyed the germicidal action of the natural secretions, and also lessened the power of the tissues to resist germ invasion.

Obstetric Delivery by Abdominal Section—Indications and Methods.—Dr. Willis G. Macdonald, of Albany, presented this paper. He said that no obstetrical operation should be undertaken until pelvimetry had established the pelvic diameters, and the relations of the fœtal measurements to these diameters had been ascertained. As the mission of the physician was to conserve life, not to take it, craniotomy must be confined to cases in which the child was already dead, and the conjugate diameter was less than two inches and a half. Craniotomy was neither a simple nor a safe operation; the mother often died from shock, rupture of the uterus, or septic infection. In general, it might be said that the Porro operation was the proper one for cases of fœtal impaction with transverse presentations, selected cases of rupture of the uterus, and, though very rarely, eclampsia and placenta prævia.

The Present Treatment of Fibroids associated with Pregnancy.—Dr. A. Vander Veer, of Albany, contributed a paper with this title, in which he stated that where there was a large fibroid of long standing, complicating pregnancy, the Porro operation was generally the best procedure.

Dr. William M. Polk, of New York, said that for the lesser degrees of cervical rigidity, veratrum viride combined with morphine would be found useful, but where medicinal measures failed he would advise dividing the cervix by an anterior incision, taking proper precautions against wounding the bladder. Where a large fibroid complicated the condition, he would favor the removal of the mass, as a whole, by the Porro operation.

Dr. H. J. Boldt, of New York, deprecated the early termination of pregnancy complicated by fibroids, and stated his belief that where at full term delivery could not be accomplished normally, it was best to remove the tumor and the *entire* uterus from above.

Dr. C. A. Von Ramdohr, of New York, favored radical measures in all cases where fibroids complicated labor. Referring to puerperal eclampsia, he said that we could feel certain about one thing, and that was that the convulsions were best controlled by the speedy evacuation of the uterus.

Dr. Sears, of Syracuse, heartily indorsed the method of treating eclampsia laid down by Dr. Potter, and called special attention to the fact that the use of the curette after full-term delivery was fraught with danger. Irrigation was safer and often equally effective.

The Causes of Death after Abdominal Operations.—Dr. H. J. Boldt, of New York, read this paper. He attributed many deaths to peritonitis and many to a form of sepsis, not always clearly recognized, but apparently due to diminished vital resistance as a result of some recent acute illness, such as pneumonia or influenza. Undoubtedly many deaths were also traceable to ignorance or carelessness in the administration of the anæsthetic.

Posture in the Diagnosis of Disease.—Dr. Reginald H. Sayre, of New York, with the aid of a large assortment of stereopticon views, gave a discourse concerning what was to be learned regarding various orthopædic conditions by means of posture. An early diagnosis was especially important, as it was chiefly by instituting treatment in the early stages of deformity that one could hope to secure good results.

Practical Applications of the X Rays.—Dr. William Hailes, of Albany, reported three recent cases of fracture in which the X rays had rendered valuable assistance.

Dr. William James Morton, of New York, then gave an X-ray stereopticon exhibition. Referring to certain untoward effects of the X rays, noticed in exceptional instances, he stated that dermatitis and depilation were occasionally observed after an unusually prolonged exposure to these rays. Such effects were not seen after the ordinary use of these rays in surgery, and generally followed the use of the vacuum tube unusually near the subject. It was rather remarkable that a dermatitis produced in this way seemed to require a period of eight or ten days for its development. Recovery was usually very tardy.

Deficient Excretion from Kidneys not originally Diseased, and Some Diseases Peculiar to Women, and Diseases of the Skin.—Dr. L. Duncan Bulkley, of New York, read this paper. He said that he had chosen this title to indicate that the paper was intended as a supplement to the one presented on this subject last year by Dr. Etheridge, of Chicago. His experience abundantly verified the statements made by Dr. Etheridge regarding the disorders of the pelvic organs that arose from deficient renal excretion, for, although dealing principally with skin affections, the diuretic measures that he frequently employed in these cases had incidentally proved of benefit to coexistent uterine derangements. It would be found convenient in practice to provide the patient with a large bottle, graduated in ounces, so that the daily quantity of urine voided could be determined with ease and accuracy. The physician then had only to note the specific gravity, multiply the last two figures of the expression of this by the number of ounces of urine voided in the twenty-four hours, and increase this product ten per cent., to obtain a pretty close estimate of the quantity of urinary solids that had been excreted. For a person weighing ninety pounds, this quantity should be five hundred grains, and seven grains should be added for every additional five pounds of weight.

Dr. Morton, of Brooklyn, said that of late years, owing chiefly to the writings of Unna, there had been a tendency to regard eczema as a purely local disorder. He would divide eczemas into two classes, viz.: 1. Those that were purely local. 2. Those dependent upon some disturbance of the vasomotor system. One of the chief causes of this vasomotor disturbance was the circulation of certain toxic substances in the blood, quite possibly the result of imperfect digestion and elimination. It was well known among dermatologists that treatment directed to the eliminative functions would often cure eczema without any local treatment.

Dr. Bulkley said that in health urea formed half of the total urinary solids. Dr. Etheridge had shown that the extractives and coloring matters of the urine constituted half of the poisonous ingredients of the urine. Another portion of the total solids in the urine was made up of the salts of potassium, and these had also been found to be very poisonous.

The Treatment of Heart Disease.—Dr. Thomas E. Satterthwaite, of New York, presented a paper on this topic. Regarding the diet, the author stated that the nitrogenous food should be increased and the carbohydrates diminished. By reducing the latter, fermentation was lessened, and hence the heart's action was less likely to be embarrassed by flatulent distention. He was opposed to the so-called "dry diet," but, while fluids were useful, they should be taken for the most part between meals. Useful as rest was, it could not be prolonged advantageously unless the muscles were exercised in some way. The now celebrated Schott exercises were all carried on with the utmost gentleness, and were of three kinds: 1. Passive movements resisted by the patient, intended for the severer cases of heart disease. 2. Slow voluntary movements, resisted by the operator. 3. Pedestrian exercises, somewhat after the methods of Stokes and Oertel. There could be no doubt about the benefit to be derived from such exercises, and the probable explanation was that the muscular movements favored the prompt emptying of the veins, and in that way diminished the peripheral resistance. In conjunction with these exercises, the Schott brothers made use of alkaline saline baths. The patient was usually immersed for a few minutes in a bath having a temperature of 95° F., and containing from one to three per cent. of salt and one per cent. of chloride of calcium, with a varying proportion of free carbonic acid gas. The speaker said that, in his experience, these baths acted very much like the exercises, but much les efficiently. They were, however, a valuable adjunct and could be extemporized by the physician in private practice without great difficulty. The effervescent bath possessed a distinct advantage over the simple saline bath, in that the carbonic acid caused an irritation of the cutaneous surface. Such a bath could be prepared extemporaneously by adding to the water a suitable quantity of hydrochloric acid and bicarbonate of sodium. Referring to medicinal remedies for heart disease, Dr. Satterthwaite said that he still looked upon digitalis as the best, and next to it, but with a wide interval, came strophanthus. The latter was unreliable and its use should be continued only for a short time. Iodide of sodium or potassium was often valuable, and had the advantage of allowing of its continued administration for a long time. Arsenic and iron were also useful adjuvants in many cases.

Dr. R. W. Wilcox said that the Schott baths and exercises certainly caused a prompt diminution in the area of cardiac dullness, and at the same time slowed and strengthened the pulse. But the bath-and-exercise treatment stopped just where our drug treatment stopped.

Dr. Henry L. Elsner, of Syracuse, said that hardly any other drug had been so much abused in recent years as nitroglycerin. The only way in which it could act as "a heart tonic" was when it was given for the purpose of overcoming some obstruction to the circulation. For this reason, this drug was chiefly useful in cases of ardiac disease in which there was disease of the coronary rteries or arteriosclerosis, and it was harmful where he heart was weak and flabby, as in cases of shock with oss of blood.

Dr. Russell said that digitalis was another remedy vhich was very often abused. For instance, its administration in cases of aortic insufficiency was very dangerous, nd might lead to death.

Dr. Satterthwaite said that he had seen two skiaraphs, taken before and after the Schott baths, with very possible source of error eliminated, and they had hown very clearly the diminution in the size of the heart hich followed the bath.

(*To be continued.*)

Book Notices.

raité de médecine et de thérapeutique. Publié sous la direction de MM. P. Brouardel, membre de l'Institut, etc.; A. Gilbert, professeur agrégé à la Faculté de médecine de Paris, etc., et J. Girode, médecin des hôpitaux de Paris, etc. Tome premier. Maladies microbiennes. Par MM. Girode, Auché, Surmont, Galliard, R. Wurtz, Grancher, Netter, Thoinot, A. Legroux, Hudelo, Boulloche, F. Widal, Courmont, L. Landouzy, Gilbert et Brouardel. Paris: J. B. Baillière et Fils, 1896. Pp. vii–818.

The rapid succession of medical discoveries and e consequently rapid depreciation in usefulness of edical works are the reasons given for the appearance this new system of medicine. The editors purpose present in it "an account of the contemporary con- ion of medical knowledge, giving special prominence the new ætiological conceptions which must hence- th play a rôle in clinical medicine, and to the modi- ations which they introduce into therapeutics." In order to facilitate early completion of the work, which is to consist of ten volumes, a large force of collaborators has been secured. While the names of some of them are unfamiliar, many are widely known in connection with the recent progress of medical science. Judging from this and from the first volume, the design of the editors will be successfully carried out.

This volume is one of two devoted to the consideration of microbic diseases. Its most conspicuous characteristic is the predominance of ætiological or, rather, bacteriological ideas, the entire subject being treated from this point of view. An ætiological basis of classification has been substituted for the usual pathological one. Several new terms are thereby introduced into the table of contents: *Streptococcie, staphylococcie, pneumococcie,* and *colibacillose.* The diseases usually styled infectious and contagious are included in the class of microbic diseases. This is open to criticism, as in many instances the organic agent has not been isolated, but is warranted by the numerous points of resemblance.

The several chapters are contributed by men qualified to write with authority. They are all of them good, and some of them are of exceptional value. In the subjects of ætiology and pathology they are especially admirable, giving excellent reviews of the recent work in these departments. Particular attention is given to the subjects of prophylaxis, isolation, and measures of disinfection, and, in the chapter on diphtheria, to serum treatment; but in some chapters the general treatment of the patient is considered with disappointing brevity. As a whole the work is harmonious, presenting few of the discrepancies frequently observed in books of composite authorship.

The introduction is an exceedingly interesting chapter on microbic diseases in general, by Girode. The intricate subject of the relations of microbes and disease is presented with remarkable clearness. After reviewing the history of bacteriology, the author discusses the general ætiology and pathogenesis of microbic diseases; he takes up in succession the microbe and the various influences which affect its activity and growth; the organism attacked and the factors of susceptibility, resistance, and immunity; the mechanism and laws of infection; the association and antagonism of germs, and their distribution. Pathological anatomy and physiology, having for their foundation the strife between the microbe and the cells of the organism, deal with the evolution and propagation of microbes and their poisonous products in the body and with the reaction of the organism and the resulting local and general lesions. Studies of the principal symptoms of infection, diagnosis, prognosis, and treatment complete the chapter.

The chapters on variola, by Auché, and on scarlatina, by R. Wurtz, deserve particular attention on account of the well-defined clinical pictures and the full discussions of complications contained in them.

Apropos of the reopening of the question of the unity or duality of vaccinia and variola in the field of experiment, Surmont (vaccinia) ranges himself with the supporters of the latter view. A vaccine procured by scraping the pustule and preserved in glycerin is recommended as the best preparation for general use, as it loses its virulence less rapidly than preparations of the lymph do.

Under the titles *Streptococcie* (Widal), *Staphylococcie* (Courmont), *Pneumococcie* (Landouzy), and *Colibacillose,* an execrable word (Gilbert), infection by the corresponding germs is treated of, not as a factor in the causation of disease but as the disease itself. The form of the disease varies because the clinical picture is dependent on the location of the pathological lesion, and this is in turn conditioned by the reaction of the individual. For instance, erysipelas, septicæmia, etc., are forms of *streptococcie*; pneumonia, cerebro-spinal meningitis, etc., of *pneumococcie*.

One of the best and perhaps the most generally useful chapter in the book is that on typhoid fever by Brouardel and Thoinot.

The book is well printed in clear type on good paper. Very few errors have escaped the proof-reader.

Der praktische Arzt als Augenarzt. Kurzes Handbuch für praktische Aerzte und Studirende. Von Dr. med. J. HELL, in Ulm. Ravensburg: Otto Maier, 1897. Pp. v–118.

THE author of this little book considers the six years devoted to medical training in Germany too brief a time to acquire even a superficial idea of ophthalmology. It is doubtful whether that is true in our medical schools, where clinical instruction in the special branches has been made compulsory, but such a book as this might well be useful where this training had not been gained and where the practitioner was thrown on his own resources.

The principal diseases of the eye requiring prompt treatment are presented briefly, and for the greater part the advice is judicious.

The Medical Environment. Two Addresses: The Hospital Question—Medical Ethics. By D. CAMPBELL BLACK, M. D., L. R. C. S. Edin., F. R. S. Edin., F. F. P. S. G., Professor of Physiology in Anderson's College Medical School, etc. Glasgow: Hugh Hopkins. Halifax: George R. Riley, 1896. Pp. 5 to 50.

Two vigorous and withal entertaining protests against two evils which do seriously interfere with our British *confrères'* pursuit of happiness and success. The first of these evils, the abuse of the dispensary, is not altogether unknown to us. The other, the *in loco parentis* attitude of the censors of the British Medical Association, is happily peculiar to the British Isles.

Report of America's Relief Expedition to Asia Minor under the Red Cross. Washington, D. C.

THIS little volume, full of interest from beginning to end, contains the executive report of the Red Cross Relief Expedition to Asia Minor in the winter and spring of 1896. It is presented by Miss Clara Barton, president and treasurer of the American National Red Cross Society. It also contains reports of the four expeditions undertaken into the interior of Asia Minor for the relief of the homeless and starving thousands of persecuted Armenians. The report is fully and carefully illustrated, and concludes with Miss Barton's telegraphic correspondence from her headquarters in Constantinople with her assistants in the field.

A careful perusal of the report confirms us in our opinion of Miss Barton's wisdom, of her methods of relief work, and of her choice of agencies employed. She brings out strongly the fact that "The American National Red Cross never appeals or solicits aid for any purpose. . . . It takes the ground that the American people, intelligent, humane, and liberal, require only to be assured of a real need, and shown an avenue by which it can be reached with relief, to call from them the proper action." Acting upon this principle, Miss Barton stated her intention of organizing this expedition, and once on the ground, with her headquarters at Constantinople, she administered the funds placed at her disposal in the wisest possible way, with the result of saving thousands of lives and ameliorating untold suffering. Her wisdom shows itself nowhere more than in her willingness to take the advice of those already on the field, and she says herself: "None of us have found any better medium for the dispensation of charitable relief than the faithful missionaries already on the ground and our government officers, whose present course bespeaks their active interest." This testimony concerning the missionaries is further borne out in other passages of the report, which also embodies most cordial and commendatory letters from them to Miss Barton, showing their earnest sympathy and co-operation in her great work. This mutual good will and confidence is especially noteworthy in view of the fact that certain prominent men have during the past year sought to throw discredit upon the American missionaries in Turkey and upon their work.

Miss Barton's mission to Asia Minor closed in August last, not because the need for help had ceased, but because her means were exhausted. She estimates, to quote again, "that from one hundred thousand to two hundred thousand of these persons, men, women, and children, are destitute of shelter, raiment, fire, food, medicines, the comforts that tend to make human life preservable, or any means of obtaining them, save through the charitable beneficence of the world. The same estimates concur in the statement that without such outside support at least fifty thousand of these persons will have died of starvation or perished through accumulated hardships before the 1st of May, 1897."

Miss Barton is outspoken in her praise of the Turkish Government for the help it afforded her in her work. Whatever may have been their motives, the officials seem, for once, to have really kept faith. How much this one act can atone for the atrocities committed before and since, in the name and by the permission of the same high officers of the Imperial Ottoman Government, each thinking person must judge for himself.

Transactions of the American Climatological Association. For the Year 1896. Volume XII, containing Part II of the Report of the Committee on Health Resorts.

WITH the exception of the continuation of the report of the committee on health resorts, which the general practitioner will find serviceable on account of the reliable data furnished concerning the soil, climate, accommodations, and attractions of some of the health resorts of the United States, there is little in this volume requiring special notice. Several of the papers treat of the prophylaxis, contagiousness, and treatment of phthisis by climate and in sanatoria. The confusion of ideas in regard to the treatment of hæmoptysis is illustrated by several other papers dealing with that subject. A few papers are devoted to the discussion of climatological topics in general or to the description of special regions.

BOOKS, ETC., RECEIVED.

A New Method of Performing Intestinal Anastomosis, with Special Reference to its Adaptability to Inguinal Colostomy, and Subsequent Restoration of the Fæcal Current. By J. A. Bodine, M. D. [Reprinted from the *Medical News.*]

Surgical Clinic at St. Mary's Hospital. By H. O. Walker, M. D., Detroit. [Reprinted from the *Leucocyte.*]

Enteroptose und intraabdominaler Druck. Von Medicinalrath Dr. C. Schwerdt, prakt. Arzt in Gotha. [Sonderabdruck aus der *Deutschen medicinischen Wochenschrift.*]

Beiträge zur Aetiologie, Symptomatologie und Therapie der Krankheit Enteroptose-Basedow, Myxödem-Sclerodermie. Von Medizinalrath Dr. C. Schwerdt, Gotha. Jena: Gustav Fischer, 1897. Pp. 3 to 29.

A System of Practical Medicine. By American Authors. Edited by Alfred Lee Loomis, M. D., LL. D., Late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M. D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University, etc. Volume I. Infectious Diseases. Illustrated. New York and Philadelphia: Lea Brothers & Co., 1897. Pp. 5 to 985. [Price, $5.]

A First Series of Fifty-four Consecutive Ovariotomies, with Fifty-three Recoveries. By A. C. Butler-Smythe, F. R. C. S. Ed., F. R. C. P. Ed., Senior Surgeon to the Grosvenor Hospital for Women and Children, etc. London: J. & A. Churchill. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. viii–119. [Price, $2.25.]

Bacteria of the Sputa and Cryptogamic Flora of the Mouth. By Filandro Vicentini, M. D. Translated by Rev. E. J. Stutter and Professor E. Saieghi from the Atti della R. Accademia medico-chirurgica of Naples. London: Baillière, Tindall, & Cox, 1897. Pp. x–239. [Price, $2.]

Principles or Guides for a Better Selection or Classiication of Consumptives Amenable to High Altitude Treatment, and to the Selection of Patients who may be more Successfully Treated in the Environment to which they were accustomed previous to their Illness. By A. Edgar Tussey, M. D., Adjunct Professor of Diseases of the Chest in the Philadelphia Polyclinic nd School for Graduates in Medicine, etc. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. vi–9 to 144. Price, $1.50.]

Deutsch's Letters. A Practical Method for Easy nd Thorough Self-instruction in the German Lanuage. Prepared with Special Regard to the Close affinity existing between the English and German anguages. By Solomon Deutsch, A. M., Ph. D. Secnd and Revised Edition. New York: Brentano, 1896. p. 3 to 480. [Price, $2.]

Forty-fifth Annual Report of the Directors of the ew York Ophthalmic Hospital, for the Year ending eptember 30, 1896.

Forty-third Annual Report of the New York Inrmary for Women and Children, for the Year 1896.

Seventh Annual Report of St. Mary's Hospital, ochester, Minnesota. For the Year 1896.

Two Cases of Fracture of the Skull. By Clayton arkhill, M. D., Denver, Colorado. [Reprinted from e *Colorado Medical Journal.*]

A New Method of Closing a Laryngeal Fistula. By layton Parkhill, M. D. [Reprinted from the *Intertional Medical Magazine.*]

A Case of Ileocolostomy by the Murphy Method; Exsion of the Cæcum; Total Exclusion of a Portion of the Ileum (Entero-apokleisis). By Clayton Parkhill, M. D. [Reprinted from the *Medical News.*]

The Diagnosis of Dilatation of the Stomach. By William Pepper, M. D., and Alfred Stengel, M. D., of Philadelphia. [Reprinted from the *American Journal of the Medical Sciences.*]

A Clinical Report of the Chemical Examination of Two Hundred Cases of Human Breast Milk. By Vanderpoel Adriance, M. D., and John S. Adriance, A. M., F. C. S. [Reprinted from the *Archives of Pædiatrics.*]

Experimental and Clinical Observations on Erosions of the Stomach. By Fenton B. Turck, M. D., Chicago. [Reprinted from the *Fort Wayne Medical Journal-Magazine.*]

Actinomycosis. By Parker Syms, M. D. [Reprinted from the *Annals of Surgery.*]

Iniencephalus. By Henry F. Lewis, M. D., Chicago. [Reprinted from the *American Journal of Obstetrics.*]

An Ophthalmoscopic Study of a Case of Hæmorrhagic Neuroretinitis. By Charles Oliver, M. D., Philadelphia. [Reprinted from the *International Medical Magazine.*]

Hypertrophied Lichen Planus. By J. A. Fordyce, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

Miscellany.

On the Difference between Serum and [Blood Solutions, the Condition of the Test Culture, and the Significance of Bacterium Coli Infection in Relation to Typhoid Diagnosis.—We are indebted to Dr. Wyatt Johnston, of Montreal, for advance sheets from the *Montreal Medical Journal* of his and Dr. D. D. MacTaggart's article with this title. They report some details concerning technics which they find necessary in order to insure successful results in serum diagnosis by the dried-blood method, with which they have now tested over five hundred samples of blood. These facts are mentioned only in so far as they have a direct practical bearing on diagnostic work.

Their results already published have been as follows:

1. Out of one hundred and twenty-nine cases which they had good reason to regard as true typhoid, with the exception of a few cases in which the first samples were taken at a very early stage and no re-examinations could be obtained; and also a few cases in which examination took place late in convalescence, they met with but one apparently genuine case of severe typhoid in which re-examination under satisfactory conditions did not give a decisive reaction by the dry-blood method, and this one also gave no reaction by the serum method. Occasionally the first appearance of the reaction was delayed beyond the end of the first week.

2. They never met with a well-marked reaction under conditions where there were not strong reasons for believing it to be due to typhoid.

3. In a few cases in which the result of the blood examination remained in doubt the mild type of the fever made an accurate clinical diagnosis impossible. In such cases, they believe bacteriological examination to be the most exact method of procedure.

4. They have not yet met with a case of typhoid

fever in which a decisive reaction was obtainable by the serum method and not by the dried-blood method.

5. They found that false reactions might be avoided by attention to the character of the culture media. They found that by using an attenuated or quiescent stock culture grown at room temperature, and transplanted at intervals of about a month, a suitable degree of sensitiveness was obtained. From such stock cultures a twenty-four-hour bouillon at 98.3° F. with a moderately diluted blood solution or serum would give prompt and decisive reaction within a few minutes in the case of typhoid-fever patients, while concentrated solutions of non-typhoid blood or serum were found to give no reaction, even at the end of twenty-four or forty-eight hours, hence estimation of the amount of dilution is not necessary for ordinary diagnostic work. (Circular of the Board of Health, Province of Quebec, January 7, 1897.)

The reaction, although specific in degree, is now generally considered to be quantitative, and small amounts of the agglutinative substances are admitted to be present in varying amounts in non-typhoid blood. The specific substances are, however, a hundredfold more abundant in typhoid blood.

With virulent cultures, the authors say, the presence of agglutinative substances in non-typhoid blood may lead to false reactions occurring which may usually be excluded by estimating quantitatively the intensity of the reaction. These false reactions they find are characterized by a rapid clumping, without the corresponding loss of motion so characteristic of the true reaction. If these clumps are watched for some hours, a tendency to break up will be seen.

Quantitative estimation is now generally done by diluting the typhoid serum, but may also be done by modifying the virulence of the culture. The degree of dilution which can be employed with a given blood solution or serum, and still a decided reaction be produced, will depend entirely on the activity (virulence) of the culture employed. This factor has been left out of the reckoning too much in a great deal of the work already published, and it probably affords a natural explanation of the widely different results obtained by competent observers.

Cultures which are made active and virulent by frequent (daily) transplantation and growth at body temperature are much more sensitive to the agglutinative substance than cultures which have become quiescent and attenuated by infrequent (monthly) transplantation and growth at room temperature.

This is apparently at variance with Pfeiffer's statement (*Centralblatt für Bakteriologie*, xix, page 594), that highly virulent cultures are less influenced by typhoid and cholera serum than less virulent ones. No details are given by Pfeiffer as to the conditions under which his non-virulent cultures were used. Pfeiffer's statements refer to serum and not to blood solution; he pays little attention to the agglutinative and much to the paralytic phenomena of the reaction, and attaches the most importance to certain disintegrative changes produced by his special method of testing *in vivo*. The authors state elsewhere that highly active cultures, if left for a few hours longer than usual between the times of transplantation, rapidly undergo involution changes, and while in this condition they are far more apt to show agglutination than is the case with the same cultures tested a few hours earlier. They find that for class purposes involution forms in cholera are as abundant and striking in a virulent culture left unchanged for three or four days as would be the case with a non-virulent culture, grown at room temperature, if left without transplanting for as many weeks or months. Bouillon cultures which have stood long without transplanting show a tendency to spontaneous partial clumping, which is quite absent during the first twenty-four hours. For this reason they prefer to use twenty-four-hour bouillons which are free from sediment for the test.

The peculiar disintegration obtained by Pfeiffer in typhoid cultures placed directly in the peritonæum of a specially immunized animal does not tend to occur where the serum is tested *in vitro* by the hanging-drop method. With blood solution, however, this peculiar phenomenon is frequently witnessed. The clumped bacteria, if watched for an hour or so, may be seen to break up into granules, which gradually become indistinct and vanish while under observation, until practically no trace remains of the clumps which shortly before studded the entire field of the microscope. The change is more likely to occur in cultures some days old than in young cultures, and more, perhaps, with attenuated than with virulent cultures. It does not occur with all samples of typhoid blood, and is not well marked in very dilute blood solutions.

This greater tendency to bacteriolytic action in blood solutions often makes the reactions obtained with them look at first sight less striking and intense than that obtained with serum where the clumps usually remain intact. Apparently, however, the difference indicates that a large amount of the bactericidal substances originally found in the plasma does not permanently remain as a constituent of the serum. This not only has an obvious bearing on serum therapeutics, but explains how the action of serum may be modified by mechanical mixture with the fibrin elements of the blood.

Quantitative estimation of the degree of dilution in the case of blood solutions is possible by hæmometry as well as by making direct measurement. With samples of freshly dried blood, sufficiently accurate observations can be made to express the degree of dilution in multiples of 10 ($\frac{1}{10}$, $\frac{1}{20}$, $\frac{1}{50}$, etc.).

The authors have employed a cell having a depth of 0.85 millimetre and giving with a Fleischl's hæmometer a tint reading one hundred per cent. with one tenth dilution of normal blood. In anæmic cases the dilution will vary with the degree of anæmia, which can readily be determined. Blood dried for some time gradually yields less and less hæmoglobin, owing to the change of this substance into the hæmatin compounds. This change goes on rapidly in air where gas is being burned and slowly in pure air. In any case, the error is in the direction of a lesser dilution than that shown by the hæmometer. As a matter of experience, they say, exact estimation of the dilution, while interesting for scientific purposes, is not necessary for the practical purposes of the test if attenuated cultures are used, and the establishment of fixed arbitrary time limits, as recommended by Grünbaum, seems only of use in avoiding false results due to the use of highly virulent cultures.

Grünbaum, being enthusiastic for exact estimation of dilution in all cases, maintains (*Lancet*, September 19, 1896), that, although most specimens of serum will in time produce clumping, typhoid serum can still be specifically identified by its being the only serum which, with free dilution in a ratio of 16 to 1, will produce a complete clumping and arrest motion in thirty minutes. A fixed dilution ratio, with an arbitrary time limit, appears quite uncalled for as a routine diagnostic practice, and has no standard value unless a culture of fixed virulence is used.

Since writing the above the authors find that Grünbaum has now stated on theoretical grounds that "possibly the use of attenuated cultures would enable us to dispense with the dilution." (*Lancet*, December 19, 1896.)

They had expected *a priori* that the solution obtained from the dried blood would be less sensitive as a reagent than the fresh liquid serum. They find that the blood solution is, on the contrary, apparently more potent than the serum in causing the agglutination, though not as to the paralytic effect, and perhaps to give the reaction at a somewhat earlier stage of the disease. This view agrees with the researches of Widal, who found that the agglutinating substance was contained in the globulins and fibrinogen, and that the serum albumin and corpuscles contained none. Thus the blood serum contains only a part of the agglutinative substance. Dr. A. H. Appel, of the United States Army, has also recently made studies and observations showing the greater agglutinative properties of solutions of the whole blood as compared with that of the serum. A decided agglutination can be obtained from weak solutions of the entire blood when none is produced by stronger solutions of the serum. While Widal places the limits of dilution with serum from below 1 to 200, R. Stern, who employed solutions of the entire blood in bouillon, reports reactions with dilutions of 1 to 2,000.

Owing to the greater sensitiveness of blood solutions as compared with typhoid serum, there is a greater tendency to false reactions if active virulent cultures are used than is the case in working with serum. This difficulty is, however, completely obviated by employing attenuated cultures for testing. Cultures which exhibit darting movements in hanging drops are too sensitive for the dry blood test. Those cultures having a quiet but rapid gliding motion in hanging drops have given uniformly good results. If the movements of the culture become sluggish, one or two daily transplantations at body temperature will make it more active and sensitive. One or two cubic centimetres of the living bouillon cultures injected into the peritonæum of a guinea-pig produce immunity and a marked blood reaction without njuriously affecting its health.

Clean preparations containing very little fibrin can eadily be obtained if care is taken not to stir up the lm of blood clot and to use plenty of water for disolving.

They find that the blood dries in a few minutes sufficiently to be inclosed in an ordinary letter.

Their routine method of testing is to place a large drop of water from a capillary pipette on the film of dried blood and let it stand for a minute or two. A loopul of the solution so obtained is taken *from the top of e drop* and mixed with a loopful of the bouillon ulture, or it may, if desired, be diluted further.

For the re-examination of cases giving a negative action, a somewhat more virulent culture may be used r a quantitative estimation also made by the serum ethod. The authors did not succeed, however, in obining a decided reaction by the serum when the reult with the dried blood was inconclusive, and they ow attach equal importance to a negative result by the ried-blood test.

In their published observations (*New York Medical ournal*, October 31, 1896; *British Medical Journal*, ecember 5, 1896) on the dried blood method, the authors state that the experiments were made with attenuated cultures, and false reactions were practically never encountered.

Later on, for a few weeks they tried active virulent culture transplanted daily at 98.3° F., but these gave, with the dried-blood solution, numerous and very peculiar false reactions—*i. e.*, reactions not due to existing typhoid. For instance, the blood of one of the authors, Dr. Johnston, when dissolved gave prompt and abundant agglutination with a virulent culture, and they habitually use it as a suitable negative test blood with attenuated cultures. A solution of the blood of the other, Dr. MacTaggart, gave no reaction. (Dr. Johnston had typhoid fever sixteen years ago; Dr. MacTaggart has never had it). The blood serum of the former gave no false reaction with the virulent culture.

On resuming the use of the attenuated cultures described above, the false reactions disappeared. On re-examination the blood drops which had given them with the virulent cultures no longer did so when tested with attenuated cultures, although dried blood from genuine cases taken at the same time still reacted typically.

The authors state that, for practical diagnostic work, when blood does not show a decisive reaction in a serious case of fever which has lasted over a week, the fever is almost certainly not typhoid. In very mild febricular cases the result may remain doubtful, unless an early bacteriological examination is made of the spleen pulp or stools.

In this connection they find that Elsner medium containing twenty-five per cent. gelatin instead of ten per cent. will remain solid at a temperature of about 80° F., and give visible typhoid colonies within twenty-four hours.

Very little attention has as yet been paid to the clinical significance of serum reactions with the colon bacillus. Courmont and Rodet have stated that typhoid blood serum reacts with colon cultures, while Achard and Chantemesse state that it does not. Widal states that he has studied quantitatively the intensity of reaction of typhoid serum with the *Bacillus coli*, but has been unable to draw any important diagnostic conclusions from the results.

Various observers have reported colon reaction as being present occasionally in different chronic and acute diseases. This can readily be understood in the light of our present knowledge of terminal infections. One case, which at first strongly resembled typhoid fever, but gave no serum reaction, has been recorded by Vedel, who found a marked colon reaction and looked upon it as only colon infection; this opinion has been confirmed by the subsequent events. The authors themselves found that reactions with the colon bacillus were rare with typhoid blood or serum (even in cases in which perforative peritonitis had occurred), provided the typhoid reaction was well marked. On the other hand, they were struck by the large proportion of positive colon reactions obtained in cases having step-ladder temperature and other symptoms strongly resembling typhoid, but without the typhoid serum reaction. They think that under these circumstances the colon reaction may have a real diagnostic importance, and indicate that the colon infection, whether occurring alone or as a secondary complication of typhoid, may be playing an important part in the production of the patient's condition. The whole question of associated colon infection deserves further study.

The reaction can be tested with ease by placing a duplicate drop of blood solution or serum on the cover slip with the drop to be tested by typhoid culture and mixing it with a drop of the colon bacillus culture. False reactions can be avoided by using stock cultures kept at room temperature and transplanted infrequently. Test cultures grown in bouillon from the stock at room temperature for twenty-four hours are free from scum or sediment and give reliable results. The conflicting results just mentioned may have been due to false reactions having been taken seriously.

In the case previously mentioned of apparently genuine typhoid without serum reaction (in which the test was first applied during the third week), the blood reacted very decidedly to the *Bacillus coli*, and produced typical clumping. The same held good of four other blood samples referred to the authors for examination as from a case having a clinical course like that of typhoid, but with negative serum reaction. A complete colon reaction they find to be exceptional in ordinary typhoid, and its presence would indicate a condition of *Bacillus coli* intoxication sufficient to explain the existence of many symptoms giving to typhoid its ordinary clinical features. Whether this excludes typhoid, is another question. Dr. W. H. Park has observed a case of fever with no typhoid serum reaction in which he was able to cultivate the typhoid bacillus by spleen puncture. Later on in the case, however, a relapse occurred and the reaction appeared. The possibility of a latent typhoid infection overshadowed by toxic phenomena due to concurrent action of the colon bacillus is quite consistent with the generally accepted opinion that many of the symptoms in typhoid, and especially the intestinal ones, are due to secondary infection by the *Bacillus coli*. It follows that in severe cases of a typhoid type, with no typhoid reaction, the blood should be tested with a culture of the *Bacillus coli*, and a bacteriological study made by examination of the stools or by spleen puncture.

The authors state that in a few cases they met with a partial typhoid reaction only, in mild cases clinically febricular, where the fever subsided by lysis within two weeks of the onset. Here, the possible presence of typhoid appeared to indicate the prudence of keeping the patients in bed and avoiding articles of diet which are contraindicated in typhoid. Their experience has been that febriculæ, with completely negative blood reaction, get suddenly well after a few days of fever. Here, also, spleen puncture, as in Dr. W. H. Park's case, might enable a decided diagnosis to be made earlier than by the blood test alone. Westbrook recommends spleen puncture under the circumstances. The possibility of infection by organisms resembling the typhoid bacilli must naturally be borne in mind.

Diabetic blood has been found by Block and by Dr. W. H. Park to give a decided agglutination. The authors examined the patients, two cases of diabetes, and both gave perfectly negative results.

The conclusions reached by Dr. Johnston and Dr. MacTaggart are as follows:

The difference in reaction observed between typhoid blood solution and blood serum is not simply due to varying intensity, but to an alteration in the relative prominence of the agglutinative, paralytic, and disintegrative phenomena which constitute the reaction. The extent of this difference also varies with the virulence of the culture, but the difference probably depends also on the presence of part of the specific substances elsewhere than in the blood serum.

Blood solution has a greater capacity than blood serum for producing the disintegrative (bacteriolytic) changes described by Pfeiffer. Descriptions of this phenomenon are conspicuously absent from the many recent accounts of the reactions with typhoid serum as observed in hanging drops.

The paralytic effect is relatively more marked with serum than with blood solutions.

Agglutination without stoppage of motion is more readily occasioned in virulent cultures by blood solution than by serum, and does not indicate existing typhoid.

It appears preferable that for the dried-blood method only attenuated cultures should be used. These have the advantage of being more easily kept in readiness than virulent cultures, and are less sensitive to changes of temperature. With the serum method virulent cultures give prompt results. Dried blood serum can be readily obtained by pushing aside the edge of a blood drop which has clotted for a few minutes, but has not dried, and collecting the serum beneath it on the tip of an ivory vaccine point, or the like. This does not, however, give a quantitative result.

For ordinary diagnostic purposes, the simplicity of the method as originally described does not require modification, provided attenuated cultures are used.

A drop of the solution obtained from a dried typhoid blood drop, mixed with a drop of the culture, will give the reaction promptly, without any special attention to the degree of dilution. In order, however, to obtain the best results, it is well to dilute freely and especially to avoid having a sticky solution of syruplike consistence.

In cases in which the clinical type strongly resembles typhoid, in which the serum does not give the typhoid reaction, a decided reaction with cultures of the colon bacillus may explain the symptoms.

The results with the dried-blood test have been very satisfactory, giving uniformly positive results with genuine and well-marked typhoid cases, and not reacting with non-typhoid blood when attenuated cultures were employed.

Although the use of serum undoubtedly enables the results to be recorded and compared with greater scientific precision, the dried blood answers just as well fo routine diagnostic work.

The alterations in reaction, induced by very slight modifications of the manner of testing, help to explai differences in the results reported by experienced an careful observers. With the same blood and culture the amount of dilution possible largely depends o whether plain bouillon, bouillon culture, or water i used for diluting. Opinions also vary as to what shoul be regarded as constituting a reaction. Anything le than complete clumping and total arrest of motion o tainable by the dry as well as the moist test in a youn attenuated culture should not be regarded as typical.

A Case of Dermatitis from Exposure to X Rays.— In the February number of the *Scottish Medical a* *Surgical Journal* Professor E. Weymouth Reid, Dundee, relates the following case which occurred his own person: Having to deliver a lecture on Rön gen's discovery, he wished to obtain a photograph of own chest and abdomen through the clothing, to hibit the contents of the pockets in addition to t skeletal structures. The exposures to which he was s jected were as follows: The abdomen, on November twenty minutes, followed by another exposure of fo minutes. The chest, on November 3d, fifty minu followed two days later by an exposure of ninety minu

The coil was of ten-inch spark fed by ten ampères, and the Crookes' tube ("focus" pattern) was some three inches from his waistcoat as he lay upon the table.

On the evening of each exposure marked erythema of the skin on the abdomen and chest was noticed immediately beneath the position of the vacuum tube and, in addition, slight redness of the skin of the back over an area corresponding to the exit of the rays from the body. The professor at once began to rub in lanolin and continued to do so for the next twelve days.

Vesicles soon appeared, continues the author, and gradually coalesced, so that by fourteen or fifteen days the cuticle was loose. On the back vesicles also were formed, but soon subsided.

By seventeen days the cuticle began to peel off, leaving a surface exactly like that seen when the cuticle was rubbed off a dissecting-room subject, except that it was of a bright-red color. The peeling of the skin of the chest, in correspondence to its time of exposure, was about two days later than that of the abdomen.

The surface left was "raw" and "weeping," but not very painful. It was kept well dusted with powdered talc and protected from the friction of the clothes by a pad of wadding.

The author states that the discharge next became sero-purulent and that he had now lost some thirty square inches of cuticle, and must have been daily losing considerable amounts of albumin in the discharge, and it was with difficulty that he attended to his laboratory duties.

However, by twenty-seven days the surface was dry, and in thirty-three days quite healed.

On January 11, 1897, there was no vestige of hair eft upon the chest, and he has not been troubled with he shaving of his chin for the last six weeks, the hair having come out by the bulbs to the touch of the razor wenty-two days after the chest exposure, after a slight preliminary erythema of the skin not followed by loss f cuticle.

The time of the appearance of the symptoms in his case, he says, agrees fairly closely with that observed in two cases reported by Dr. Drury and Dr. Radliffe Crocker.

In Dr. Drury's case there were vesicles on the tenth ay after the first exposure (fourth day after second xposure), and there was a profuse discharge by the wenty-fourth day (the eighteenth day after the second xposure). The skin, however, was not sound sixteen eeks later, a fact possibly associated with the state of ealth of the patient (kidney affection). In Dr. Crocke's case vesicles were seen on the eighth day, the epiermis began to separate on the fourteenth day, and eeling was complete by the eighteenth day. The skin as not sound sixty-seven days after the exposure.

The fact that about a week elapses before any serious mptoms of dermatitis appear, he says, suggests that the rface cells are destroyed by the rays, and that the inmmatory phenomena are associated with the removal necrosed tissue.

The author thinks it is possible that the early appli-tion of the skin's natural fat may have had something do with the fact that he was well in a month.

The interesting point, he thinks, is the apparent munity of structures deeper than the skin, for, alough he had a sore on his chest and pimples on his ck, his lungs, so far as he knows, are not affected. is conceivable, he thinks, that this may be connected th the fact that the gas mixture in immediate contact with the skin is richer in oxygen than that in the pulmonary alveoli, and that the rays produce "active" oxygen, which is capable, when present in sufficient amount, of destroying the cells, were it not that there is no evidence that the X rays do produce "active" oxygen.

Skin structures, continues Professor Reid, and possibly the conjunctiva, at present appear to be the only tissues on which action has been noticed. Passage of the rays for an hour through the head of a boy of medium intelligence did not, in his hands, cause deterioration or improvement thereof.

Dr. Crocker, he says, makes the suggestion that as a prophylactic workers with these rays might wear red cloth gloves or coat their hands and face with red paint, which could easily be washed off, but he adds that the waistcoat within which he suffered was lined with scarlet flannel.

The Treatment of Chicken-pox.—The treatment of this affection, says a writer in the *Journal des praticiens* for January 30th, is especially an hygienic one for the purpose of avoiding possible complications, the most dangerous of which is nephritis. The child should be kept in one room and carefully guarded against cold. Milk, bouillon, and hot drinks should be the principal elements of alimentation, and if there is any albumin at all in the urine an absolute milk diet should be prescribed.

The purely medicinal treatment consists of the use of very few substances and is especially a symptomatic one. The gastric disturbance is more frequently one of the symptoms to be combated. In the beginning of the disease an emetic will produce the best results; when the eruption is complete, purgatives are preferable, either castor oil (one hundred and fifty grains) or calomel (from 1.6 grain to 2.4 grains). If there are symptoms of a general infection, tonics should be administered, and, according to Braquehaye and Rouville, small doses of intestinal antiseptics may be given.

If there is a somewhat intense stomatitis the affected region may be touched with the following solution:

℞ Potassium chloride.............. 75 grains;
Water......................... 3 ounces.
M.

Conjunctivitis should also be carefully treated with instillations of the following solution:

℞ Zinc sulphate.................. 15 grains;
Water......................... 3 ounces.
M.

For an ointment for the outer border of the eyelids, Comby recommends the following:

℞ Yellow precipitate........... 3.2 grains;
Vaseline..................... 150 "
M.

For the same purpose Josias uses the following mixture:

℞ Calomel .... 4 grains;
Vaseline..................... 150 "
M.

Furthermore, Comby advises the application of the mitigated silver-nitrate stick or copper sulphate to the conjunctival or corneal vesicles.

To combat pruritus and prevent scratching, the affected parts should be anointed with vaseline and boric acid or dusted with starch to which has been added equal parts of some antiseptic or inert powder, such as talc and boric acid, or zinc oxide and boric acid. Antiseptic ointments, such as vaseline with salol, should not be employed until the period of incrustation.

Secondary infections may become grave and should be actively combated. Guyot cites a case of chicken-pox in which the patient died after an attack of erysipelas of the face. Gangrenous transformation of the vesicles is of an extremely grave nature, and should be combated, according to Josias, by bathing and spraying with a solution of corrosive sublimate, by painting with potassium permanganate, and by the use of antiseptic ointments.

Josias also advises physicians to carefully watch the arthritis of convalescence, as suppuration may occur. Immobilization of the affected articulation should be practised or continued extension of the large articulations, and sodium salicylate administered. If the articulation contains thick or purulent liquid, arthrotomy should be practised at once. Progressive massage may also be employed after a sufficient length of time has elapsed, and then prudently.

If there are no serious complications, at the end of twelve or fifteen days of a normal attack the patient may be given a bath, and allowed to go about among the family. With regard to school children, the legal duration of isolation is twenty-five days from the first day of the invasion of the disease.

The Clinical Significance of Litten's Phenomenon.—In the *Gazette hebdomadaire de médecine et de chirurgie* for January 31st there is an abstract of an article by M. Swenson which appeared in the *Works of the Society of Physicians of Kiew.* The author states that in 1892 Professor Litten called attention to a clinical phenomenon which was found in connection with the contraction of the diaphragm.

If a subject lies on his back facing the light, there may be seen at the moment of inspiration a certain depression of the lateral parts of the thoracic cage, which is produced between the mammary and the axillary lines. This depression begins at the seventh and eighth ribs and extends to the ninth and tenth ribs. When inspiration is finished this depression disappears, to be replaced, when expiration begins, by expansion of the same part of the thoracic cage, which latter phenomenon follows a course contrary to that of the depression.

M. Swenson, says the writer, in studying this phenomenon himself, found it in the majority of healthy subjects. In order to observe it distinctly, the subject should be thin and muscular, and make deep inspirations. In the majority of cases the phenomenon is more pronounced on the right side.

M. Swenson thinks that Litten's phenomenon explains the condition of pulmonary expansion and indicates the lower limit of the lung. He also thinks that distention of the abdomen and hypertrophy of the liver cause this phenomenon to occur higher up, and that pleurisy empyema, pneumothorax, and pleural adhesion cause its disappearance.

The author cites three cases which have come under his observation in which the presence or the absence of this phenomenon enabled him to decide the diagnosis.

Neumann, for example, relying on the presence of this phenomenon, had been able to give a diagnosis of diaphragmatic hernia in a workman who had fallen from the third story of a building, who presented the clinical symptoms of pneumothorax.

Skin Irritation Caused by Handling Hyacinth Bulbs.—Professor Henslow, in a lecture delivered on November 24, 1896, says Mr. W. T. Freeman, in the February number of the *British Journal of Dermatology,* alluded to the eczema produced in workers who handled and cleaned the bulbs of the common hyacinth. He said this was due to the minute crystals of oxalate of calcium (rhaphides) adhering to the scales of the bulbs. Dr. Morris, at a recent meeting of the Linnæan Society, also alluded to this form of eczema and referred to it as the irritation produced by crystals of oxalate of calcium. He thought that the irritation was due to direct puncture of the skin by the crystals. He also called attention to the fact that snails would avoid attacking hyacinth bulbs, although they would attack others growing close by.

Mr. Freeman states that inside of the sheathings of imported hyacinth bulbs, and particularly of Roman hyacinths, there is a quantity of dust which is partly made up of insect *débris,* largely also of rhaphides, and it also swarms with parasites.

They are of about the size of the *Acarus scabiei.* The bulb parasite and the *Acarus scabiei* are very comparable under the microscope, but the hooklets of the former are of the single crab-claw type, and there are none of the half-moon hooklets which are the ordinary claw representatives of the itch parasite. Parasites of all sizes appear in a confused mass, and there is no doubt, says the author, that a few of them digging about in the epithelial interstices cause much more irritation than the rhaphides do, although the latter, of course, may be answerable in part for the irritation.

The author states that the eruption is found upon the hands, the arms, and the face, and that it does not, so far as he has seen, run on to pustulation or even to the stage of a weeping eczema. One of his patients described his hands as being chapped, which description, says Mr. Freeman, is quite applicable. Another had a vesicle or two, in appearance suspiciously like the burrows of the *Acarus scabiei.* Rest from work for a week or so and ordinary bathing nearly always cure the disease.

The Surgical Treatment of Dislocation of Tendons.—In the *Gazette médicale de Paris* for January 30th ther is an abstract of an article from the *Revue de chirurgi* for September, 1896, in which the author remarks tha the peroneal tendons are much the most subject t dislocation, although very few examples of these dislo cations have been pointed out. The peroneal tendon on account of their length and the manner in whic they are rolled behind a slightly prominent ankle, a particularly predisposed to this dislocation.

These tendinous dislocations have a simple sym tomatology. There are a sensation of rupture at t moment when the injury is produced, a very sharp pa which renders walking difficult, but not impossible, a a bloody effusion which is sometimes considerable. I nally, there may be seen, on the exterior surface of t ankle, one or two cords, which can be felt, moreov rolling under the finger, which may be made to go ba to their place, but do not remain there.

In a case of obstinate dislocation of the peron tendons, says the author, Perinoff and Kousmine s ceeded in maintaining the tendons in their normal p tion with the aid of a flap of periosteum and of a bo portion held in place perpendicularly to the ankle means of two nickel nails. A plaster bandage was plied to the leg, and the results obtained were exc lent.

Original Communications.

TWO CASES OF MAMMOTH SARCOMA.

By E. R. AXTELL, M. D.,
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PATHOLOGIST TO SAINT LUKE'S AND TO THE ARAPAHOE COUNTY HOSPITALS.

THE two cases which I briefly report were hospital cases, and attracted much attention among the physicians and surgeons because of the diagnostic question.

Thomas H., aged thirty-eight years, hotel steward, widower for two years, came from Ireland when sixteen years of age, and lived in Chicago from 1872 to 1887. He then came to Colorado. His father probably died of cancer of the stomach. His mother, a brother, and a sister are living and well.

He has always enjoyed good health, and denies syphilis and alcoholism. He has never met with any injury. He was practically strong and well until January, 1893, when he noticed that he was not up to tone; that he was gradually getting weaker and weaker; that he had but little energy, and that after any prolonged riod of standing his feet would swell. About the be- ning of March, 1893, just one year before his death, noticed an occasional sharp pain in the upper part of epigastrium and in and about the region of his heart, ich pain did not in any way affect his breathing. th this pain, however, the patient noticed that he fre- ntly vomited after taking food. He would often have sea after eating, which would frequently continue il relieved by emesis. He never at any time vomited od. The pain which he complained of occasionally ted from the stomach area to the left shoulder and n the left arm.

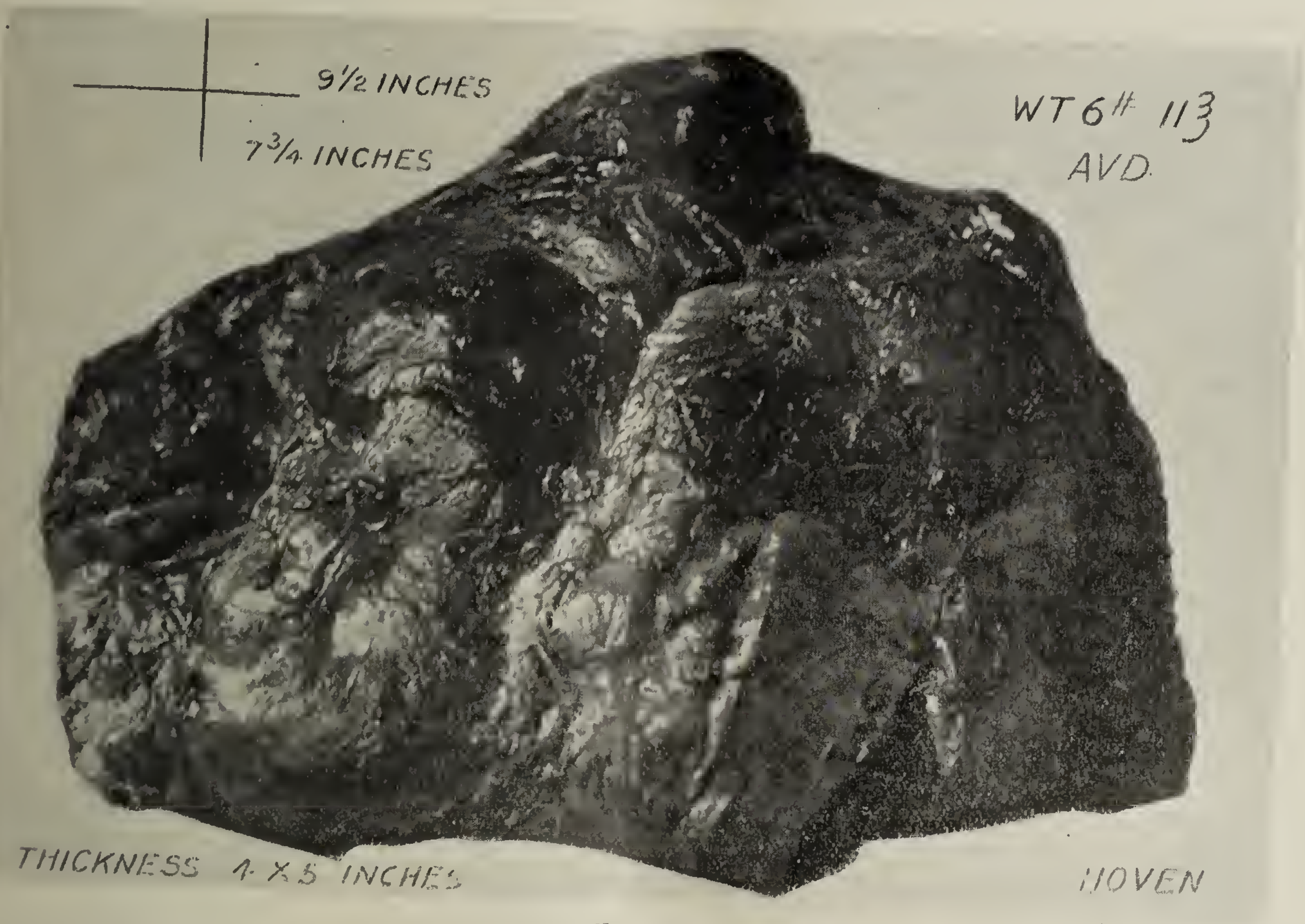

FIG. 1.

In August of 1893 he first noticed shortness of breath. After this began it steadfastly continued, being worse on slight exertion. Soon after the shortness of breath was noticed he began having a cough, with some frothy expectoration. This lasted until late in December, 1893, when it got much better, but at this time he noticed that his dyspnœa was getting worse. During the summer of 1893 his appetite and digestion were very bad, and he lost twenty-three pounds in weight.

Just before the patient's death he found that he could breathe easiest when sitting up and leaning slightly forward. On lying on his back he would suffocate; he could breathe, however, with difficulty when lying on his left side. He complained of no pain, except an occasional distress in the left lower chest on moving.

He died of gradual asthenia and progressing dyspnœa, with increasing œdema of the legs. He had been seen by a great many physicians, and the diagnosis of mediastinal tumor had been made. To Dr. Henry Sewall I am indebted for the history as given above.

The notes of the post-mortem, which I made, were as follows: Body that of a well-developed adult male. Age, about forty years. Lower extremities very large and œdematous. No œdema in the upper extremities. Post-mortem rigidity and staining well marked.

On opening the abdomen a half pint of clear, serous fluid escaped. In the right pleura there was a pint and a half of blood-stained serum, in which were a number of large fibrinous clots. At the apex and over the posterior surface of the right lung there were a number of old adhesions.

In the left pleura there were old adhesions at the apex and fresh adhesions over the posterior and outer surfaces of the left lung. Both lungs were compressed anteriorly and laterally and occupied a much less space than usual.

The right lung showed some induration at the apex, which was apparently due to an old fibroid process. In the lower part there was some hypostatic congestion. The left lung presented the same conditions as the right.

The œsophagus, the trachea, and the bronchi were normal. The pericardium, on its inner surface, presented all evidences of a universal pericarditis, a large quantity of fresh inflammatory lymph being found over all surfaces. The heart was depressed and compressed on the diaphragm. The apex of the heart was three inches below the left nipple and an inch and a half to the left. Both ventricular cavities of the heart were dilated. The heart wall, the heart valves, the endocardium, and the aorta were normal.

The entire mediastinum was involved by a large tumor, which was firm and fairly encapsulated. It was nine inches and a half from right to left, seven inches and three quarters from above downward, and from four to five inches in thickness. It weighed six pounds and eleven ounces, avoirdupois.

Fig. 1 shows the mass as photographed immediately after removal. All the structures in the mediastinum—the aorta, the anterior wall of the trachea, the mediastinal glands, carotids, and the like—were matted together in the tumor mass. The blood-vessels did not seem to be compressed or the walls eroded. The capsule of the mass was very thin, and intimately connected with the tumor. It could not be stripped off. The tumor mass pressed the heart downward and to the left. The diaphragm was uninvolved.

On section, most of the tumor presented a grayish-white appearance, like raw fish. The mass cut readily, and but little fluid escaped from a cut section. There were but few connective-tissue bands through the mass, and these were found mostly in the lower half of the tumor. In some of these bands were a few ill-developed blood-vessels. Through the mass, almost on every section, there were a number of large and small hæmorrhages in various stages of disintegration.

A few of the anterior bronchial glands were enlarged. The posterior and middle groups were so intimately blended with the tumor that they could not be found.

The liver was enlarged and it showed fatty infiltration and chronic venous congestion. The spleen was small but normal. The left kidney was enlarged one third. Its capsule stripped. It was apparently normal, except for some chronic venous congestion. The right kidney presented the same appearances.

Both suprarenal capsules were large and cirrhotic, being white and hard. The pancreas was normal, as were also the intestines.

The stomach was dilated fully one half. On its mucous membrane, over the lesser curvature, there existed five ulcers of various sizes, none larger than a dime. Two of the ulcers were anterior and three posterior to the line of the lesser curvature.

A few of the mesenteric glands were enlarged. The brain and spinal cord were not examined.

The microscopical examination of various portions of the tumor mass showed it to be a small round-celled alveolar sarcoma.

The second case was under the care of Dr. Clayton Parkhill, who kindly furnishes me the following notes:

Mr. P., aged twenty-two years, a clerk, and a single man, came to me early in January of this year with a history of rapid emaciation, with the appearance of a lump in his left side, which he had first noticed four months before. He had been treated by a number of physicians for marked obstinate constipation, attended with great difficulty in retaining and digesting his food. The lump, when seen by me, was of large size, lay in the left half of the abdomen, and had its greatest prominence above the umbilicus and slightly to the left of the median line. To palpation it gave every evidence of being a fluctuating tumor, and this feature of the case was noted by all who palpated the mass. I decided upon an exploratory section to determine the character of the growth. On opening the abdomen, what was apparently a translucent fluctuating tumor of retroperitoneal origin presented itself. I believed it was cystic and probably connected with the pancreas, although I admitted the possibility of its being of nephritic origin. I stitched its peritoneal covering to the margin of the abdominal wound, packed this opening with gauze, and put the patient back to bed for three days. I then operated upon him again by plunging a trocar into the mass. To my surprise, I got only a small amount of bloody serum. It became evident that I did not have to deal with a cyst, but probably with one of the soft forms of sarcoma. I then opened the mass and found it to consist of a very friable tissue of about the consistence of brain substance, excessively vascular, and in parts almost fluctuating. On removing a portion of the tissue the bleeding was terrific. It was seen that it would be impossible to enucleate the tumor, so the cavity which I had made was packed with gauze, which controlled the hæmorrhage satisfactorily. A week later the patient died.

The pathological notes, taken at the post-mortem, were as follows: Body that of an adult male, small of stature, fairly well developed, but greatly emaciated. Probable weight, a hundred and twenty pounds. Post-mortem staining and rigidity well marked. In the central line of the abdomen there is an incision from the umbilicus to a point three inches above. Through this incision a quantity of gauze projects. On removing the gauze and opening the abdomen the intestines are seen to be greatly distended with gas.

All of the organs and tissues in the thorax were found to be normal. The peritonæum was examined in every part and was not found inflamed, except for a small area in the pelvis. Here there was a little inflammatory lymph and some little effusion.

The left half of the abdominal cavity, from the median line outward and from three inches above the umbilicus to the base of the bladder in the pelvis below, was filled with a tumor mass covered by omentum and by the posterior layer of peritonæum, and having over its anterior surface and bound to it the transverse colon in this manner:

This bowel was so closely bound to the tumor that it contained no fæcal matter, and while not absolutely occluded yet it had but little lumen.

The vermiform appendix was normal and so were the intestines. The transverse colon to the right of the tumor contained a large amount of fæcal matter. The omentum covered in the tumor alone, the entire apron being firmly adherent to its anterior surface.

On removing the intestines, the kidneys were next sought for. The right one was normal. The dissection of the left kidney from the tumor mass was made very carefully, and only after the mass was well pulled forward. No connection of any kind existed between this kidney and the tumor. The kidney was normal as well as its pelvis. The ureter was normal, but was pressed upon in the recumbent posture. Both suprarenal glands were normal.

The tumor mass was over ten inches long, five inches broad, and four inches in an antero-posterior diameter. It was not hard, but was of a rather soft consistence. It had a thin capsule, and was sharply marked off from its surrounding tissues, except posteriorly and near the spinal column. Over its surface were a number of places which gave fluctuation. This was particularly true of the lower third. On making a little incision into these areas, a dark, chocolate-brownish fluid, without any odor other than that of a faint beef-tea smell, escaped. Fully a pint of this fluid was discharged from all parts.

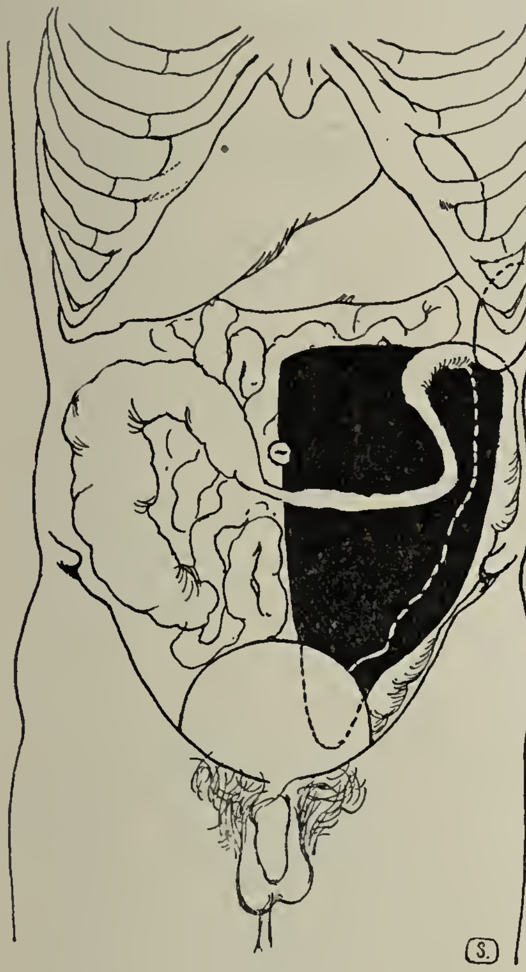

FIG. 2.

The stomach was next examined, and was found normal. The liver and gall bladder were normal. The pancreas lay behind and rather to the right of the tumor and had no relation whatever to the mass.

The spleen was a little larger than the normal and presented over its outer surface a perisplenitis. The lower edge of the spleen touched the upper tip of the tumor and there was a distinct connection between the spleen and the tumor at this point. Just anterior to this connection there was in the spleen a small cyst, of the size of a marble, which contained the same dark, chocolate-brownish fluid as was found in the tumor mass.

On separating the spleen from the tumor and sectioning it, the splenic pulp was found to be denser than normal, and infiltrated irregularly by three areas, which were lighter in color and of softer consistence than the pulp itself. In these infiltrating areas could be seen a few small hæmorrhages.

The removal of the tumor showed that its probable origin was from the retroperitoneal areolar tissue. The pinal column was not croded, and the lymphatic glands .ere could not be found.

Section of the tumor presented the characteristic ap-earance of the small round-celled sarcoma. It was ery soft everywhere, but in some areas it was almost ulpy. The more solid areas presented a pale-pink color nd had no glistening white fibrous streaks running hrough their substance. They did present, however, yellowish and creamy patches, due to fatty degenerative changes. With these patches every section showed the red, brown, and yellow points which indicate hæmorrhagic patches in various stages of alteration and which are so common in the sarcomas of this group. The pulpy portions of the tumor were dark and gave evidence of blood extravasation.

The microscopical examination of the tumor mass showed it to be a round-celled sarcoma. The examination of the invaded spleen showed the round sarcomatous cell. The examination of the fluid showed red and white blood-corpuscles.

The brain and spinal cord were not examined.

A REPORT ON CASES OF SUNSTROKE DURING THE SUMMER OF 1896.

By N. R. NORTON, M. D.,
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THE unusually hot weather of the past summer afforded an opportunity for the study and treatment of sunstroke which has seldom, if ever, been equaled in New York city.

The immediate institution of proper and vigorous treatment in insolation is of more vital importance to the patient than in any other disease. It thus stands alone as the disease in which the results of hospital treatment are so much more satisfactory than in private practice. This is largely due to a very efficient ambulance service and a thorough equipment for the management of such cases.

The following cases occurred in the wards of the Presbyterian Hospital, in the service of Dr. J. P. Thornley, with whose kind permission they are reported.

During the six days from August 8th to 13th, inclusive, about one hundred and ten persons were brought to the hospital suffering more or less from the excessive heat. About fifty of the cases were of the milder forms, and are not included in the report. Cold water was given, with which they sponged their heads and chests, and they were kept in a cool room and left the hospital in from fifteen minutes to twelve hours. The tabulated cases include only those with a temperature on admission of 104° F., or over, which was evidently rising. Of these, there were sixty-one, with nine deaths; a mortality of fourteen and three quarters per cent.

Owing to the great pressure of work the records of eleven cases of recovery were lost, so the tables give the detailed account of but fifty cases.

Ætiology.—The cumulative action of the heat was pronounced; it was the third day of excessively high temperature and humidity when the first cases occurred. Then, on six successive days, there were two, six, ten, twenty-one, seven, and four, respectively. Of the fifty cases, twenty-seven were between three and eight o'clock in the afternoon, four from eight o'clock to midnight, four from midnight to 6 A. M., and six more before noon. From noon to 3 P. M. nine cases were

Table of Cases of Sunstroke.

Case.	Name.	Result.	Male or female.	Age.	Occupation.	Admitted.	Time.	From onset to admission.	Temperature, degrees Fahrenheit, on admission.	Mental condition on admission.	Pulse.	Respiration.	Initial bath.
1	W. U.	Cured.	Male.	32	Baker.	July 14.	10.00 P. M.	4 hrs.	105·6	Coma.	Rapid, weak.	Stertorous.	Ice sponge.
2	C. S.	Died.	"	49	Carpenter.	Aug. 8.	7.00 "	15 min.	112·0	"	" "	..	" "
3	M. S.	Cured.	"	47	Bartender.	" 9.	9.40 A. M.	15 "	115·0	"	" "	Gasping.	" "
4	M. McG.	Died.	"	24	Seaman.	" 9.	3.45 P. M.	10 "	112·0	"	Imperceptible.	"	" "
5	J. C.	Cured.	"	..	Laborer.	" 9.	4.00 "	10 "	109·0	"	Rapid, bounding.	Stertorous.	" "
6	P. B.	"	"	34	Milk-hand.	" 9.	4.00 "	9 "	104·5	Conscious.	" "	Normal.	Sponge at 75°.
7	A. K.	Died.	"	..	....	" 9.	5.30 "	7 "	109·0	Coma.	" "	Stertorous.	Ice tub.
8	A. N.	Cured.	"	42	Cigarmaker.	" 9.	8.35 "	1 hr.	110·0	"	" weak.	"	" "
9	M. C.	"	"	..	....	" 10.	11.00 A. M.	10 min.	109·0	"	" bounding	"	" "
10	T. P.	Died.	"	70	....	" 10.	11.30 "	10 "	108·0	Semiconscious, delirious.	" weak.	Rapid.	" "
11	J. M.	"	"	25	....	" 10.	12.15 P. M.	10 "	110·2	Coma.	" full.	Stertorous.	" "
12	M. H.	"	"	43	Laborer.	" 10.	1.00 "	6 "	110·2	"	" weak.	Gasping.	" "
13	J. C.	Cured.	"	36	....	" 10.	4.00 "	10 "	112·0	"	" full.	Stertorous.	" "
14	A. G.	"	"	30	Stonecutter.	" 10.	5.00 "	15 "	108·0	"	" "	"	" "
15	H. D.	"	"	38	Driver.	" 10.	5.45 "	10 "	109·6	"	" "	"	" "
16	F. S.	"	"	60	Cigarmaker.	" 10.	7.35 "	10 "	107·4	"	" weak.	"	" "
17	T. W.	"	"	54	Cashier.	" 10.	7.40 "	5 "	108·2	Semiconscious, delirious.	" full.	"	" "
18	A. B.	"	"	35	Carpenter.	" 10.	10.20 "	10 "	109·6	Coma.	" bounding	"	" "
19	J. T.	"	"	..	....	" 11.	12.30 A. M.	3 hrs.	109·5	"	" weak.	Gasping.	" "
20	J. G.	"	"	31	Laborer.	" 11.	12.50 "	10 min.	109·5	"	" "	Stertorous.	" "
21	M. B.	"	Female.	68	Domestic.	" 11.	9.30 "	5 "	106·4	"	" "	"	" "
22	M. K.	"	Male.	35	Policeman.	" 11.	10.00 "	15 "	105·0	Conscious.	" full.	Normal.	" "
23	P. S.	"	"	..	....	" 11.	1.00 P. M.	10 "	104·0	"	" "	"	" sponge.
24	C. S.	"	"	..	....	" 11.	1.35 "	10 "	107·8	Coma.	" "	Stertorous.	" tub.
25	V. D.	"	"	30	Laborer.	" 11.	2.30 "	15 "	109·6	"	" "	"	" "
26	M. McN.	"	"	38	"	" 11.	3.00 "	5 "	112·2	"	" weak.	Gasping.	" "
27	J. H.	Died.	"	..	....	" 11.	3.00 "	10 "	112·0	"	" "	"	" "
28	M. M.	Cured.	Female.	20	Domestic.	" 11.	4.00 "	15 "	109·8	"	" full.	"	" "
29	F. R.	"	Male.	31	Stableman.	" 11.	4.30 "	15 "	110·1	"	" "	Stertorous.	" "
30	— S.	"	"	..	....	" 11.	4.40 "	15 "	104·0	Conscious.	" "	Normal.	" sponge.
31	P. G.	"	"	33	Driver.	" 11.	5.00 "	10 "	109·5	Coma.	" "	Stertorous.	" tub.
32	S. M.	"	Female.	19	Domestic.	" 11.	5.00 "	20 "	110·4	"	" weak.	Gasping.	" "
33	T. K.	"	Male.	..	....	" 11.	5.00 "	10 "	107·0	"	" full.	Stertorous.	" "
34	J. B.	"	"	..	....	" 11.	6.00 "	30 "	105·2	Conscious.	" "	Rapid.	" sponge.
35	J. K.	"	"	..	....	" 11.	6.00 "	8 "	106·0	Coma.	" "	Stertorous.	" tub.
36	E. S.	Died.	"	47	Wood carver.	" 11.	7.00 "	15 "	109·5	"	" weak.	Gasping.	" "
37	J. T.	"	"	..	....	" 11.	7.00 "	4 "	111·0	"	" "	"	" "
38	J. C.	Cured.	"	55	Laborer.	" 11.	7.30 "	15 "	105·2	Conscious.	" full.	Rapid.	" sponge.
39	J. F.	"	"	27	Driver.	" 11.	7.35 "	10 "	109·0	Coma.	" "	Stertorous.	" tub.
40	B. R.	"	Female.	27	Domestic.	" 12.	9.00 A. M.	40 hrs.	109·8	"	" "	"	" "
41	B. C.	"	"	57	"	" 12.	12.15 P. M.	12 "	105·0	Stupid.	" "	Normal.	Sponge at 70°.
42	W. K.	"	Male.	51	Printer.	" 12.	3.00 "	30 min.	106·0	Semiconscious.	" "	Stertorous.	Ice tub.
43	C. K.	"	"	..	....	" 12.	5.00 "	15 "	106·1	Coma.	" "	"	" "
44	G. J.	"	"	40	Baker.	" 12.	7.00 "	20 "	109·0	Wild delirium.	" "	"	" "
45	J. M.	"	"	35	Driver.	" 12.	8.00 "	13 "	107·9	Coma.	" "	"	" "
46	F. H.	"	"	30	Laborer.	" 12.	9.00 "	15 "	104·0	Stupid.	Slow, "	Rapid.	" sponge.
47	T. C.	"	"	33	"	" 13.	12.05 A. M.	10 "	107·3	Coma.	Rapid, weak.	Gasping.	" tub.
48	W. P.	"	"	34	Waiter.	" 13.	3.00 "	30 "	109·5	"	" "	"	" "
49	J. W.	"	"	40	Soldier.	" 13.	5.00 P. M.	15 "	108·9	Semicoma, delirious.	" full.	Stertorous.	" "
50	M. R.	"	"	27	Driver.	" 13.	7.30 "	15 "	104·8	Conscious.	" "	Rapid.	Sponge at 70°.

brought in. Thus there were forty cases from noon to midnight, and but ten from midnight to noon. There were but few in women, forty-six of the sixty-one cases being in men.

The occupation of most of the patients involved exposure to the sun, though in a fair number, including all the women, this was not so.

The average age was thirty-six years, the oldest being seventy and the youngest nineteen years of age.

With few exceptions the patients were large-framed, *Table of Cases of Sunstroke.*

Duration.	Temperature, degrees Fahrenheit, when removed.	Lowest temperature, degrees Fahrenheit.	Time of lowest temperature after bath.	When first rational after bath.	Time of first major rise of temperature after lowest temperature.	Height of first major rise after lowest temperature, degrees Fahrenheit.	Number of subsequent baths.	Variety.	Stay in hospital.	Alcoholic habit.	Complications and prominent symptoms.	Remarks.
17 min.	100·6	97·7	38 min.	40 min.	7 hrs.	102·4	..	....	10 days.	Moderate.	Vomiting.	
45 "	101·0	95·0	2 hrs.	Never.	4 "	105·0	4	Sponge at 75°.	19 hrs.	"	"	
33 "	104·5	99·5	32 min.	24 hrs.	5 "	105·6	22	Sponge of ice water and at 75°.	44 days.	Marked.	Meningeal symptoms.	Bled.
50 "	101·2	100·0	30 "	Never.	2¼ "	105·0	2	Ice sponge.	9 hrs.	"	Convulsions.	
15 "	101·2	98·0	30 "	10 min.	5 "	102·2	..	....	2 days.	Moderate.		
30 "	102·3	99·2	75 "	......	7 "	101·8	..	....	16 hrs.	"		
5 "	.....	....	......	Never.	......	.....	..	....	7 min.	Marked.	Convulsion, vomiting.	Asphyxiated.
65 "	102·0	99·8	20 min.	12 hrs.	3 hrs.	106·0	4	Sponge of ice water and at 75°.	13 days.	"	Furunculosis, obesity.	Hæmorrhage from mouth, stomach, and rectum.
45 "	103·5	94·0	75 "	2 "	8 "	102·9	3	Sponge at 75°.	48 hrs.	?		
35 "	103·8	93·0	75 "	15 min.	7½ "	104·2	8	" of ice water.	60 "	Moderate.	Broncho-pneumonia.	One previous attack.
50 "	103·0	97·1	45 "	Never.	1¼ hr.	108·9	2	" " "	6 "	?	General convulsions.	Sponge baths inadequate.
25 "	103·4	94·5	40 "	"	1½ "	102·7	..	....	2½ "	Marked.	Nephritis, cirrhosis, adherent pericardium.	
30 "	103·0	98·8	65 "	4 hrs.	2 hrs.	105·2	2	Ice tub and sponge.	40 "	"	General convulsions.	Good effect of second tub bath.
17 "	103·8	99·5	60 "	30 min.	3½ "	102·0	..	....	39 "	Moderate.		
18 "	103·5	98·0	32 "	15 "	1½ hr.	103·0	2	Ice sponge.	40 "	"		
10 "	104·0	94·0	25 "	15 "	70 min.	103·7	4	Sponge at 75°.	2 mos.	"	Ulcer of leg.	General debility.
15 "	103·6	98·5	33 "	5 "	35 "	102·0	2	Ice sponge.	36 hrs.	None.		
25 "	103·0	99·0	50 "	10 "	......	.....	1	" "	36 "	Moderate.		
28 "	104·0	99·0	72 "	20 "	85 min.	105·0	1	" "	18 · "	Marked.	Alcoholic on admission.	
28 "	105·0	99·0	72 "	4 hrs.	1½ hr.	106·0	1	" tub.	32 "	"	" " "	
20 "	103·6	98·8	50 "	30 min.	8 hrs.	102·0	..	....	33 days.	?	Furunculosis, delusions.	
25 "	103·5	99·0	13 hrs.	......	2 "	.....	..	....	32 hrs.	Moderate.		
8 "	102·0	97·0	35 min.	......	1 hr.	100·0	..	....	20 "	"		
30 "	102·7	98·3	45 "	20 min.	7 hrs.	103·0	1	Ice sponge.	26 "	"		
20 "	103·6	98·5	60 "	10 "	2 "	104·0	1	" "	18 "	?		
60 "	101·0	95·0	2 hrs.	90 "	4 "	103·7	2	" "	28 "	Moderate.		
26 "	103·5	97·4	50 min.	Never.	4 "	105·0	1	" tub.	8 "	Marked.	Alcoholic on admission.	Convulsions.
6 "	103·7	100·0	70 "	20 min.	3½ "	103·0	1	Sponge at 75°.	8 days.	None.		
40 "	103·5	97·0	60 "	10 "	2 "	103·0	2	Ice sponge.	41 hrs.	Moderate.		
25 "	102·5	99·4	40 "	......	......	.....	..	....	16 "	?		
20 "	103·0	95·0	50 "	25 min.	2 hrs.	100·0	..	....	17 "	Marked.	Scalp wound.	
27 "	103·0	97·4	43 "	4 hrs.	3½ "	103·8	2	Ice tub and sponge.	2½ days.	None.	....	Good effect of second tub bath.
17 "	102·4	98·2	25 "	15 min.	......	.....	..	....	18 hrs.	Moderate.		
8 "	101·0	99·8	60 "	......	......	.....	..	....	12 "	"		
7 "	103·2	95·0	20 "	15 min.	2 hrs.	100·5	..	....	14 "	?		
20 "	104·0	99·8	40 "	3 days.	2½ "	104·2	16	1 Ice tub. 2 Sponge. 13 Sponge at 70°.	8 days.	Moderate.	Pulmonary congestion.	Bled.
41 "	105·0	98·0	40 "	Never.	1 hr.	104·6	2	Ice sponge.	8 hrs.	Marked.	Alcoholic on admission.	Moribund.
45 "	103·0	99·3	75 "	......	15 min.	102·4	1	Sponge at 75°.	38 "	Moderate.		
15 "	104·0	97·8	30 "	10 min.	1¾ hr.	105·0	7	" " "	10 days.	"		
15 "	103·6	98·0	35 "	15 "	3¼ hrs.	102·5	3	Ice sponge.	6 "	None.		
10 "	101·5	98·8	24 hrs.	......	......	.....	..	....	2 "	Marked.	" " "	
30 "	102·0	98·5	30 min.	10 min.	......	.....	..	....	17 hrs.	Moderate.		
30 "	99·4	95·0	1 hr.	20 "	1½ hr.	101·0	..	....	15 "	"		
25 "	103·2	100·0	35 min.	20 "	......	.....	..	....	24 "	"		
17 "	103·2	96·5	25 "	20 "	3 hrs.	102·0	..	....	14 days.	Marked.	Delirium tremens.	
18 "	101·7	99·0	22 "	......	1½ hr.	101·0	..	....	3 "	?		
20 "	101·3	98·0	30 "	24 hrs.	5 hrs.	103·0	1	Ice sponge.	36 "	Marked.	Alcoholic on admission.	Tubercular pleurisy
15 "	103·4	97·1	50 "	6½ "	2 "	105·0	1	" tub.	36 hrs.	"	" " "	Lavage.
35 "	104·8	99·8	40 "	5 min.	......	.....	..	....	24 "	"		
20 "	100·5	99·0	30 "	......	......	.....	..	....	17 "	Moderate.		

well-muscled, and robust individuals. Those that were the reverse did poorly as a rule.

Only one (Case X) had had a previous attack, and that was on the day before admission. His was a fatal case.

The use of alcohol seemed to have a direct and unfavorable influence. The habit was marked in thirty-two per cent., moderate in forty-six per cent., denied in ten per cent.; in the remaining twelve per cent. no history was or could be obtained. Eight persons were markedly alcoholic on admission, and of these four died.

Prodromes.—Definite histories were next to impossible to obtain. Most of the patients had had but slight warning, such as dizziness, a sense of fullness in the head, and decrease or suspension of sweating. There were a few exceptions, however, the most notable being Case XL. The case was that of a domestic, aged twenty-seven years. Two days before the attack she was at work in the house washing and ironing. In the afternoon she felt excessively tired, had some headache, and went to bed. The next day, after sleeping all night, she felt but little improved, but was up and about at different times during the day. She slept most of that night and waked about 7 A. M. of the day of her attack. After that she remembered nothing. At 9 A. M., about forty hours after the first symptoms, she was brought to the hospital in coma, with a temperature of 109.8° F.

Onset.—In most of the cases (forty-four) the onset was sudden, with immediate loss of consciousness. It varied from thirty minutes to forty hours in the six others, with symptoms referred to above.

SYMPTOMS ON ADMISSION.—*Mental Condition.*—Seven patients, with an average temperature of 104.8° F., varying from 104° to 105.6° F., were conscious. Two, with temperatures of 104° and 105° F., were stupid and quiet. Delirium and semicoma were present in five cases, the temperature ranging from 106° to 109° F., with an average of 108° F. Coma characterized the thirty-six remaining cases, and the temperature averaged 109.1° F., the lowest being 105.6°, the highest 115° F. The delirium in some cases was wild, in others muttering.

Pulse.—In eighteen cases the pulse was very rapid and weak, even to being imperceptible, while in the others it was of good force, often bounding, but without tension, occasionally slow, but usually accelerated.

Skin.—In all the cases there was a peculiar characteristic pungent odor, and the surface was hot and dry. In those cases with weak and rapid pulse the face was pale, in the others flushed.

Pupils.—Many were pin-point and did not react to light, others being normal in size and reaction.

Respiration varied from normal to stertorous; eleven patients in very bad condition respired with short gasps.

Muscular System.—There was marked general muscular relaxation in thirteen patients whose circulation and respiration were markedly depressed. Convulsions or muscular twitchings were not present in any case on admission. Involuntary dejections occurred in all the forty-one comatose and semiconscious cases, either before admission or in the first bath. Vomiting characterized but two cases.

TREATMENT AND SUBSEQUENT COURSE OF THE DISEASE.—The ambulance surgeons were instructed to at least start undressing the comatose patients on their way to the hospital. Immediately after admission they were stripped of clothing, which took about thirty seconds. They were then immediately put into the bath, at least one of the house staff directing the treatment in each case.

All temperatures recorded are rectal, in the conscious patients taken on admission, and in the comatose as soon as possible after starting the bath.

With the first five cases the netted cot was used, the patient being constantly rubbed and sponged with ice water. They were all in coma, and the sponging was used only because the tubs were not in readiness, the cots having been sufficient for the small number of cases treated in previous years.

The average temperature in these cases was 110.3° F., the lowest 105.6° F., the highest 115° F. Thirty-two minutes was the average duration of the bath, varying from fifteen to fifty minutes. The baths were stopped at from 104.5° to 100.6° F., the average temperature of the patients when removed being 101.7° F. Following the bath at an average interval of fifty minutes, ranging from thirty minutes to two hours, the temperatures fell to from 100° to 95° F., the average being 98° F.

The tub bath was used in thirty-six cases, including those of all the comatose and delirious, and that of one conscious patient. The water was as cold as it could be kept, with ice constantly floating in it, usually at about 40° F. Four attendants continually rubbed briskly all parts of the body, the head being constantly bathed.

The average temperature in these cases was 108.9° F., the lowest 105° F., the highest 112.2° F. The baths lasted from six to sixty-five minutes, the average being twenty-six. When the temperature reached from 105° to 99.4° F., an average of 103.2° F., the patients were removed from the bath. In a time averaging forty-eight minutes, and varying from twenty minutes to two hours, the temperature dropped to 97.6° F. as an average, the limits being 93° and 100° F.

Ice sponge baths were also used in five cases of conscious or stupid patients, with moderate temperatures varying from 104° to 105.2° F., and averaging 104.5° F. They were bathed from eight to forty-five minutes, or an average of twenty-three minutes. The temperature at which they were removed was about 102° F., varying from 101° to 103° F., falling to 98.9° F. as an average, but varying from 99.8° to 97° F. about forty-six minutes after their being removed from the bath.

In all cases the temperature was taken every five minutes during the early part of the bath, and when it began to drop, as quickly as the thermometer would register. The temperature rose, even after the bath had been started, in five cases, but never rose over 0.6° F., usually in about five minutes.

Only eight patients received stimulation by drugs during the bath, and they were persons in whom the pulse was almost imperceptible. Camphor and ether were used for rapid action, and then strychnine, all subcutaneously.

The stimulating action of the cold water was remarkable. Patients that were apparently taking their last gasps would immediately respire more deeply, and a pulse almost impossible to feel would, in the course of a few minutes, be of good quality, though rapid. Those in coma would, when the temperature began falling, as a rule, rouse up, struggle, and become more or less delirious. Those delirious would resist the bath vigorously, then grow more quiet, and again become restless as the temperature fell more.

On removing the patients from the bath, they were rubbed dry with crash towels and covered with a blanket, and hot-water bottles were placed at their feet. If their condition indicated it, either from pulse, respiration, or any considerable falling of the temperature, they were further stimulated with camphor and ether, strychnine, digitaline, or atropine, hypodermically, and with whisky and hot water by the rectum, or, when possible, by the mouth.

The early regaining of consciousness seemed a particularly good prognostic sign; in all such cases (except Case X) the patients did remarkably well. Of these there were twenty-six, and they were rational, on an average, in twenty-four minutes after leaving the bath, the shortest interval being five minutes, the longest two hours. With two exceptions (Cases X and XXXVI) in the fatal cases the patients never regained consciousness, and those that were critically ill after the baths did not regain consciousness for hours, and, in some cases, days.

After the lowest temperature following the bath had been reached, there was more or less of a reactionary elevation, in some cases needing no treatment, in others nothing but one or more sponge baths at 70° to 75° F. Some of these second elevations of temperature were very alarming, and demanded very prompt and active treatment.

The ice-water enemata, at first suggested by Parkes, were not used, owing to the difficulty in following the changes of temperature closely enough, and because the ice sponge, or, in the worst cases, the ice tub baths acted quickly, and were stimulating (due to rubbing) rather than depressing.

The most severe and sudden second rises were usually announced, even before the thermometer indicated it, by fibrillary twitchings, becoming more and more marked, until they closely resembled epileptic or uræmic general convulsions. They were usually preceded and accompanied by a wild delirium, which subsided as the temperature advanced. This rise was extremely rapid, and frequently advanced after beginning the bath. In all there were seven patients with severe convulsions, of whom six received second ice tub baths, which were started as soon as possible after the beginning of muscular twitchings, so as to anticipate the high temperature which was sure to follow. Thus the highest temperature reached was 106° F., one not going above 103.8° F., the average being 104.9° F. at an average period of two and a half hours from the lowest temperature obtained by the first bath.

Of the six patients, two died, never having become conscious. The four others had not regained consciousness after the first bath, but in a short time after the second were perfectly rational, acting like the twenty-six above mentioned. Three cases needed no subsequent sponge bathing.

For the convulsions mentioned, morphine was used, but with apparently no effect.

It was made the routine practice to take all temperatures every half hour until danger of sudden rise had passed. Whenever a temperature reached 102.5° F., or, in some cases, 103° F., the patient was sponged, usually with water at 70° F., but if the temperature had risen rapidly, with ice water. These baths lasted from ten to fifteen minutes, or, in some cases, until the temperature was reduced to 101° F.

Subsequent Baths.—Twenty patients recovered with no baths other than the initial one. Two died without the temperature rising again. Three of the six with convulsions, above mentioned, had one second tub bath. The twenty-five remaining, of whom two already had had a second ice tub, had sponge baths; nine had one; seven had two; two had three; three had four; one each had seven, eight, sixteen, and twenty-two.

After the temperature had thus been controlled, the patients, with few exceptions, recovered uneventfully.

Urine, for the first twelve to twenty-four hours, was, in all cases, voided normally, was not decreased in quantity, averaged a specific gravity of 1.020, and almost always contained a trace of albumin, but seldom casts.

Mental Condition.—Except in alcoholic cases, a quiet sleep was the rule. The mind was clear, with no headache, but considerable headache when the patients first got up.

Skin.—In all the patients that had had ice baths the entire surface was covered with minute petechiæ. The skin remained dry in many instances, but after administering Dover's powder, with hot lemonade, sweating became normal. Four patients had troublesome furunculosis from direct infection from foul water in which they were bathed, due to involuntary dejections.

Mucous Membranes.—During and after the tub baths there was bloody expectoration in about ten cases, apparently due to intense congestion, which must have existed through all mucous surfaces, as four patients had blood-stained stools, and one had considerable blood with the vomitus.

Time in Hospital.—Excluding nine fatal and nine complicated cases, there were thirty-two in which the patients left the hospital at the end of thirty hours, as an average, varying from eight to seventy-two hours.

THE FATAL CASES.—Autopsies were made in five of the following nine cases, by Dr. George A. Tuttle:

CASE II.—C. S., a man, aged forty-nine; carpenter; German; admitted August 8th. Moderate alcoholic habit. Had been at work in his shop all day, and was about to start home when he suddenly became unconscious.

Brought to hospital at 7.15 P. M. comatose, face flushed, surface hot and dry, breathing stertorous, pulse rapid and rather weak. Immediately undressed and ice sponge bath started. First temperature taken was 112° F. At the end of forty-five minutes temperature had fallen to 101° F., and he was removed to a dry cot. The temperature continued to drop rapidly, calling for vigorous stimulation. Two hours after bath, temperature reached 95° F., he became delirious, pulse rapid and weak. Camphor and ether, strychnine and whisky given hypodermically, and whisky and hot water by rectum. For delirium, Magendie's solution, five minims, and hyoscine, a hundredth of a grain. There was some vomiting. The pulse improved, the temperature rose, and by 1.30 A. M., August 9th, had reached 105° F. He was sponged thirty minutes with water at 75° F. with but little effect on the temperature. Delirium had given place to coma, in which he remained. Sponge baths were given at 5.30 A. M. for temperature of 104.8° F. for thirty minutes, with reduction to 102° F. At 8.30 A. M. took four ounces of milk. Another bath at this time reduced temperature from 104° to 102° F. At about noon there began some muscular twitchings that were general. Coma deepened. At 2.15 P. M., with temperature 104.4° F., there was a sudden general tonic spasm, and patient died nineteen hours after admission.

Autopsy.—August 10th, twenty-four hours post mortem. Heart: Aortic and mitral valves a little thickened; endocardium stained and dark; muscle flabby. Lungs: Considerable congestion and œdema. Liver and spleen normal. Pancreas soft and blood-stained. Kidneys: Section rather pale; markings indistinct in cortex. Little stained by decomposition. Brain rather soft; otherwise normal.

CASE IV.—M. McG., a man, aged twenty-four; seaman; Irish. Previous history not obtainable. Admitted August 9th, at 3.55 P. M. Coma, face pale, skin hot and dry; pulse almost imperceptible, breathing rapid and shallow; general muscular relaxation. Immediately given ice sponge bath, with general friction. First temperature, 112° F. Given one drachm of camphor and ether hypodermically; sulphate of strychnine, a twentieth of a grain hypodermically. General condition improved during bath. At the end of fifty minutes the bath was stopped at 101.2° F. Rubbed dry. Heat was applied to feet, and was given two ounces of whisky and eight ounces of hot water by rectum. At 7.30 another ice sponge bath for temperature 105° F., which dropped in ten minutes to 101.3° F. A similar bath at 9.45 P. M. for temperature 104.4° F., temperature reaching 99° F. at 11 P. M. Coma persisted. More such stimulation as was given before, with no response. Still in coma. At 12.20 A. M., August 10th, a general convulsion, lasting three minutes. Following this, pulse became imperceptible, and the patient died at 12.35 A. M.

Autopsy.—August 11th, fourteen hours post mortem. Heart: Endocardium blood-stained. Muscle flabby. Lungs: Extreme congestion, most marked in lower lobe. Liver: Section brown and stained. Spleen and pancreas normal. Kidney: Section congested. Brain appears soft about fourth ventricle, elsewhere normal. Cord a little softened; vessels of pia much congested.

CASE VII.—A. K., a man. Nothing known of him. Admitted at 5.48 P. M. August 10th. Markedly alcoholic; coma; surface hot and dry, face flushed, pulse small and rapid. Immediately put in ice tub bath. First temperature, 109° F. Within five minutes there was a general tonic spasm, jaws firmly set, and he began vomiting large quantities of fluid smelling strong of alcohol. Jaws were quickly pried apart and the pharynx was swabbed out, but already the trachea and bronchi were full of vomitus. The O'Dwyer forced-respiration apparatus was immediately put in the larynx, but with every stroke of the bellows, instead of the lungs expanding, large quantities of vomitus were forced out along the side of the tube. The patient died seven minutes after admission.

No autopsy.

CASE X.—T. P., a man, aged seventy. Admitted August 10th at 11.40 A. M. The previous day had an attack of insolation, for which he was treated at Roosevelt Hospital, and left there the morning of the present attack. On admission, semiconscious and delirious, face pale, skin hot and dry, breathing stertorous, pulse rapid and weak, temperature, 108° F. Ice sponge started, but soon changed to ice tub. Bath stopped at the end of thirty-five minutes, when temperature had reached 103.8° F. A little over one hour later it had dropped to 93° F. Pulse weak; general cyanosis. He responded well to stimulation by means of whisky and hot water by mouth and rectum, and by hypodermic injections of camphor and ether and strychnine. At 8 P. M. temperature had reached 104° F. Color good; pulse strong and perfectly rational. A sponge bath of ice water reduced the temperature to 100° F., and he continued to improve. The temperature ran fairly high, and until the morning of August 12th he had had in all seven sponge baths, with good reactions, the temperature reaching about normal after each bath. He now began to have a marked bronchitis, and the temperature again rose to 103° F. Another bath was given, of the usual duration, but following it the temperature reached 94.5° F. This seemed to be too much for his already exhausted condition. The pulse became rapid and weak, there was marked cyanosis, breathing rapid and shallow, and some delirium. There were signs of œdema of both lungs. The temperature rose to 104.2° F., when he died at 8.20 P. M., August 12th, sixty hours after admission. There was no autopsy.

CASE XI.—J. M., a man, aged twenty-five. Admitted August 10th at 12.25 P. M. Comatose; face rather pale; skin hot and dry; pulse rapid and weak; respirations shallow. Immediately put in ice tub bath. Temperature, 110.2° F., which rose in five minutes to 110.4° F. After the temperature began to fall he became very delirious. When the temperature reached 103° F., fifty minutes after beginning the bath, he was removed. In about two hours the temperature had reached 97° F., but he still remained unconscious. At 2 P. M. he was removed to the main ward, when almost immediately he began having some muscular twitchings and wild delirium. In fifteen minutes his temperature rose from 100° to 103° F., and in another fifteen minutes to 107° F. On account of the crowding in the insolation ward he could not be removed there and given another tub bath, so the ice sponge was used. Five minutes after beginning it the temperature rose from 107° to 108.9° F., and then began to fall, reaching 102° F. one hour later, when the bath was stopped, after which it fell to 98° F. In the light of later cases a more rapid drop would have been more favorable, as it almost immediately began rising again, accompanied by the same delirium and terrific general convulsions, which morphine did not affect. Before another bath could be given the convulsions became more and more severe, the temperature suddenly rose to 105° F., and the patient died.

Autopsy.—Large frame, finely muscled. Heart: Some ecchymotic spots beneath endocardium of left ventricle; otherwise normal. Lungs: Marked congestion throughout. Liver and pancreas normal. Spleen: Capsule thickened on outer surface. Kidneys: Capsule adherent; surface roughened; section apparently normal. Brain: A few small congested spots in pia mater, with extravasation of blood beneath; tissue everywhere quite firm. Cord: Upper half seems a little softer than lower part; otherwise appears normal.

Case XII.—M. H., a man, aged forty-five; laborer. Admitted August 10th at 1.10 P. M. While at work was suddenly seized with dizziness, and fell. When brought to the hospital was in coma; face rather pale; skin dry and hot; pulse rapid and weak; breathing shallow; all muscles relaxed, and had a temperature of 110.2° F. Immediately put in ice tub bath and vigorously rubbed. At the end of twenty-five minutes the temperature had reached 103.4° F., and he was removed, rubbed dry with crash towels, blanketed, and hot water put at the feet. Pulse remained weak, so he was stimulated with camphor and ether, one drachm, and strychnine sulphate, a thirtieth of a grain, hypodermically. By 2.15 P. M. the temperature had dropped to 94.5° F. Still unconscious, pulse weak, and breathing shallow. Whisky and hot water were given by rectum, and more hypodermic stimulation, but he did not respond. At 3 P. M. there was general muscular rigidity. Though his temperature rose, he became rapidly worse, and at 4 P. M. died, with a temperature of 102.6° F.

Owing to the rapidity with which new cases kept coming in, no careful physical examination had been made.

Autopsy.—August 11th, twenty-four hours post mortem. Heart: Pericardium everywhere adherent. Valves normal. Muscle flabby. Lungs: Moderate congestion and œdema. Liver soft; surface pale; section pale and flabby. Spleen and pancreas normal. Kidneys: Capsule somewhat adherent; surface rough and uneven; section cortex thin and pale; markings indistinct. Brain appears normal.

Case XXVII.—J. H., a man, aged thirty-two. Admitted August 11th at 3.10 P. M. Large frame, magnificently muscled. Comatose; face flushed; skin hot and dry; pulse rapid and weak; breathing stertorous. Immediately put in ice tub bath and rubbed well for twenty-six minutes, when temperature had reached 103.5° F., and bath was discontinued. Later the temperature reached 97.4° F., though he had not regained consciousness. About 8 P. M. the temperature began to rise, and he had slight muscular twitchings of the face, which became rapidly more general. At 8.35 P. M., with a temperature of 102.6° F., a second ice tub bath was started, in spite of which the temperature continued to rise for ten minutes, when it had reached 105° F. The next registration was 104.8° F. It was thought best to wait for another drop, but the thermometer again showed 104.8° F. Supposing that there was a mistake in taking the temperature, it was tried again, and for the third time registered 104.8° F., though from his general appearance it seemed that there must have been a drop. A new thermometer was used, which showed 98.6° F. Of course the bath was stopped immediately, he was vigorously rubbed, heavily blanketed, and surrounded with hot-water bottles. Stimulation in every possible form was used, camphor and ether, strychnine, digitaline, and whisky hypodermically, and enemata of hot water and whisky. Notwithstanding this, at the end of an hour the temperature was but 94° F. and the patient in very bad condition. In another hour the temperature had risen to 99.9° F., but he died a few minutes later.

This case was particularly regrettable, as, in the light of several similar cases that ended in recovery, it seemed probable that death was due to the prolonged bath, caused by a false-registering thermometer, probably made so by being cracked against a piece of ice floating about the tub.

Case XXXVI.—E. S., a man, aged forty-seven; woodcarver; German. Admitted August 11th at 7.15 P. M. Comatose; face pale; skin hot and dry; pulse almost imperceptible; breathing slow; very shallow. All muscles very much relaxed. Pupils did not react to light. In worse condition on admission than any of the other patients. He was expected to die momentarily. Immediately put in ice tub bath, when first temperature taken was 109.5° F. In twenty minutes temperature was 104° F. and bath stopped. Stimulated vigorously with little response. Forty minutes after the bath the temperature was 99.8° F., and then rose to 102° F. when he had a sponge bath. Still in coma; marked cyanosis; breathing stertorous; pulse barely felt. There was some vomiting. He was then bled, eight ounces being taken. After this he responded better to stimulation, the temperature rising to 104.2° F. A second ice tub bath was given at 11.35 P. M., after which temperature reached 99.1° F. Hot normal salt solution (one pint) was given by rectum, and other stimulation hypodermically.

During the next day, the twelfth, two sponge baths of ice water were given, and the general condition was improved, though coma persisted. On August 13th patient could be slightly aroused; pulse good force; only slight cyanosis; pupils and tendon reflexes normal. Saline enemata and digitaline and strychnine were continued. During the day six sponge baths were given, being ordered whenever the temperature reached 103° F.

On the fourth day the patient could be aroused enough to answer questions, though usually apathetic and stupid. There was some flatness of left side of face, ptosis of right eye, marked muscular weakness of right side of trunk, respiratory movements being almost entirely confined to left side. Abdominal and thoracic viscera normal, but for signs of congestion at the base of each lung. But one bath during day.

During the fifth, sixth, and seventh day the conditions remained about the same. Mentally, he improved. The congestion of the lungs increased. But one bath was necessary each day. On the eighth day he began coughing severely, pulse irregular and rapid, breathing labored. Over the base of each lung posteriorly scattered areas of broncho-vesicular voice and breathing could be made out, and fine crepitant and subcrepitant râles were abundant. The muscular weakness had become less marked on the right side.

The entire chest was cupped and poulticed. Digitalis and nitroglycerin given. On the ninth day the patient became worse, respirations of about 50, extremities cyanosed, almost unconscious. Was bathed for a temperature of 104.5° F.; seemed a little improved for it, but then lapsed back to his former condition and began having convulsive movements of all extremities, which continued to death, which occurred at 2.30 P. M. of the ninth day.

Autopsy.—August 20th, eight hours post mortem.

Heart: Mitral valve thickened, otherwise normal. Lungs: Marked congestion. Gall bladder contains a calculus $1 \times \frac{3}{4}$ of an inch. Liver and pancreas normal. Spleen soft. Kidneys: Several small cysts; cortex a little opaque; some congestion. Brain: Pia congested; slight ecchymosis beneath; pia a little opaque and rough in places; brain tissue firm and apparently normal; a little blood-stained serum in ventricles.

The case is interesting because of the length of life, when his condition on admission is considered; the benefit of bleeding; the change for the worse, without assignable cause, when he seemed improving; the fact of no broncho-pneumonia being found at autopsy, when the signs, symptoms, and death indicated its presence; the meningeal symptoms and their minor lesions found at autopsy.

CASE XXXVII.—J. T., a man, aged fifty-four. Admitted August 11th at 7.04 P. M. General condition practically the same as that of Case XXXVI. Temperature, 111° F. Immediately put in ice tub bath, during which he was freely stimulated. Only slightly improved by bath, which was stopped in thirty-six minutes, when the temperature was 103° F. Following this, temperature reached 98° F. At intervals of an hour and two hours sponge baths had to be given, the temperature having reached 104° F. After the second the temperature fell to 95° F., and then rose to 100.5° F. at 2.50 A. M. of the following day, when he died, never having regained consciousness.

OTHER CASES OF CONSIDERABLE INTEREST.—CASE III.—M. S., aged forty-seven; bartender; German. Admitted August 9th at 9.55 A. M. The attack began with no premonition, save that he was very tired from great loss of sleep. There was a marked alcoholic history. On admission he was in coma; face flushed; pulse very weak and rapid; breathing shallow; muscles relaxed. The temperature was 115° F., the highest ever recorded in the Presbyterian Hospital. Immediately put on netted cot and the ice sponge bath used for thirty-three minutes, when temperature was 104.5° F. He was stimulated with strychnine, digitaline, and whisky, and sent to the main ward at 10.45 A. M., with a temperature of 99.5° F. His general condition was greatly improved, but coma persisted. In the next nine hours four ice sponge baths were necessary to keep the temperature below 104° F.

The second day coma still existed; there was rigidity and increased tendon reflexes of the extremities; pupils and viscera appeared normal. Four sponge baths given. On the third day he was semiconscious, answered questions, marked vertical nystagmus, some rigidity of muscles of back of neck. Surface covered with petechiæ. Great difficulty in swallowing. Pulse rapid and weak. Five baths given. The fourth day, symptoms of cerebral congestion persisting, nine ounces and a half of blood were taken by venesection, and a pint of hot normal salt solution was given by the rectum. All other stimulation stopped. The temperature ranged fairly high, and four sponge baths at 70° F. were necessary. The urine was involuntary, of a specific gravity of 1.020, trace of albumin, and a few granular casts.

By the fifth day he was better, the bleeding apparently having been of benefit. Still stupid, with considerable rolling of the head from side to side. The head was shaved, an ice-cap was applied, and small blisters were put on over each mastoid region. Three baths were given, and he seemed brighter.

From this time on improvement was slow but constant. Took nourishment well, talked intelligently, reflexes normal. The last of the twenty-two baths that he received was given on the sixth day. On the sixteenth day he sat up in bed. By the twenty-first day he was out of bed. When first attempting to walk, on the thirty-first day, there was marked muscular inco-ordination, making the gait very unsteady, and affecting upper extremities as well. Weighed one hundred and fifteen pounds.

On the forty-third day had gained five pounds. Still there was present some inco-ordination, and there remained a somewhat weakened mental condition. He left the hospital on the forty-fourth day.

The case was remarkable in the recovery from such a high temperature, accompanied by such severe and persistent meningeal symptoms.

CASE VIII.—A. N., aged forty-two; cigar-maker; Bohemian. Admitted August 9th at 9.35 P. M. A large frame, very obese, weighing about two hundred and fifty pounds. On admission was in coma; face flushed, pulse full and bounding; breathing stertorous. Was interesting chiefly because in the ice tub it took seventy minutes to reduce the temperature from 110° to 102° F. Four subsequent baths given, each a sponge bath, and with good reaction. His mental condition cleared up slowly, not being rational until twelve hours after the bath. For two days there was considerable vomiting, vomitus containing blood. There was also some bleeding from mouth and rectum.

Later he had a troublesome furunculosis, apparently due to direct infection from the water of the bath, made nocuous by involuntary dejections. The same thing occurred in several other cases. He left the hospital on the eleventh day.

CASE XLV.—J. M., aged thirty-five; brewery driver. Admitted August 12th at 8.13 P .M. There was a marked alcoholic habit. His was an average case, the temperature being 108° F. The initial ice tub bath was all that was necessary to control the temperature. Shortly after the bath he became perfectly conscious, slept well, and the temperature remained down. There was, however, a fine alcoholic tremor of tongue and fingers. On the third day he insisted upon going out.

On the day following he was brought back, having violent delirium tremens, the only case thus complicated.

It was necessary to strap him in bed. Good-sized doses of strychnine made it possible to use chloral, the bromides, morphine, and hyoscine freely. Under this treatment the delirium subsided in forty-eight hours, and he left the hospital thirteen days after the onset of the delirium tremens.

CASE XIII.—J. C., a man, aged thirty-six. Admitted August 10th.

CASE XX.—J. G., a man, aged thirty-one. Admitted August 11th.

CASE XXXII.—S. M., a girl, aged nineteen. Admitted August 11th.

These three cases resembled each other closely. In them the good results obtained from the ice tub bath, in the grave second rise of temperature, make Cases XI and XXVII particularly regrettable.

Their temperatures on admission were 112°, 109.5°, and 110° F., respectively. After the initial bath the temperature of each approached the normal line closely, none being subnormal. None of them, however, regained consciousness. At a time varying from one to three hours there began in each the severe muscular twitchings indicative of a sharp second rise of temperature. As soon as possible, not waiting for the high temperature, the second ice tub bath was started. Even with it, the second temperatures reached 105.4°, 105.9°, and 103.8° F., respectively. After the bath two dropped to normal, Case XIII reaching 95° F. Within half an hour each patient was perfectly rational, and made an uneventful recovery, leaving the hospital on the third, third, and fourth days, respectively.

The severity of the epidemic, the large number of cases occurring in so short a time, and the crowding consequent to such an emergency, makes the low death-rate of nine in sixty-one cases (eleven not tabulated), or fourteen and three quarters per cent., extremely gratifying.

In this hospital, from August, 1888, to April, 1896, there were twenty-two cases of insolation with temperatures corresponding to the arbitrary standards adopted above, with nine deaths, a mortality of forty-one per cent. At the Pennsylvania Hospital, in the summer of 1887, there were thirty-one cases, with twelve deaths, a mortality of thirty-eight per cent. A report by Swift of one hundred and fifty cases records seventy-eight deaths, a mortality of fifty-two per cent.

A comparison of these records shows the importance of noting, if possible, any points in the treatment of cases in the epidemic of the past summer which could in any way account for the marked difference in mortality.

Hydrotherapy and skilled and careful nursing seem to have been the chief factors; the very frequent recording of the temperature enabling the baths to be given at the earliest and, therefore, most valuable time; the use of the ice tub bath, with constant and general friction of the entire surface, thus reducing the temperature in the shortest possible time, and being stimulating rather than depressing; the use of the same bath for all severe secondary elevations of temperature, and for the minor elevations sponge baths of ice water or of water at from 70° to 80° F., depending upon the individual case; and the repetition of these baths whenever the temperature is high enough to make them seem advisable.

All other means have seemed entirely inadequate.

The New York Celtic Medical Society.—At the last regular meeting, on Thursday, February 25th, the order for the evening was as follows: A paper entitled A Case of Stramonium Poisoning, by Dr. Morrissey, and one on The Treatment of Ulcers by Skin Grafting, by Dr. McGrath; scientific communications; exhibitions of instruments and specimens; and presentations of cases.

The St. Louis Medical Society.—At the last regular meeting, on Saturday, February 27th, the following papers were to be read: A Method of Treating Fractured Patella, by Dr. W. A. McCandless; and Multiple Diffuse Catarrh, by Dr. J. C. Mulhall, which was to be discussed by Dr. W. G. Moore, Dr. George Homan, Dr. Hugo Summa, Dr. William Porter, Dr. L. Bremer, Dr. R. C. Atkinson, and Dr. C. Shattinger.

CONCUSSION OF THE SPINAL CORD

(RAILWAY SPINE).*

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Microscopic work from the William Pepper Clinical Laboratory.

The following case of fracture is interesting from a pathological standpoint rather than from a clinical. The accident occurred during the service of Dr. De Forest Willard at the Presbyterian Hospital. We are indebted to Dr. W. E. Hughes, pathologist to the hospital, for the material.

In consequence of a severe blow from a trolley car the spinal column was fractured at the eleventh thoracic vertebra. The lower limbs were completely paralyzed, and no involuntary movements were noticed. Sensation was entirely lost below Poupart's ligament, except on the front and outer part of the thighs, in the distribution of the external cutaneous nerves. These nerves arise from the second and third lumbar roots (Gray), though in some cases they receive fibres from the first lumbar (Quain). The lesion in the spinal cord was located chiefly at the first, second, and third lumbar segments. It has been shown that it is necessary to cut at least three spinal roots in order to destroy the sensation in any area of the body. This fact may explain the preservation of sensation in the distribution of the external cutaneous nerves notwithstanding the location of the spinal lesion.

Inability to urinate and defecate was observed. On examination, the eleventh thoracic vertebra was found elevated and the twelfth depressed. By manipulation the prominence was reduced, but the depression remained. Death was chiefly due to exhaustion. At the autopsy a large amount of blood was found in the muscular and connective tissues at the seat of injury, the laminæ of the eleventh thoracic vertebra presented an irregular line of fracture, and hæmorrhage was noticed within the vertebral canal, but external to the dura. It is probable that most of this blood flowed into the canal in removing the posterior part of the vertebræ. There was no evidence of displacement of the vertebral bodies. The dura was intact, and after it had been opened no hæmorrhage was observed within. The cord, even at the seat of fracture, was quite firm and of normal shape, and presented exteriorly no distinct signs of softening. It was placed at once in Müller's fluid and transverse cuts were not made at this time, as the material was desired for microscopic study. There were no indications of injury from pressure upon the spinal cord exteriorly.

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* Read before the Philadelphia Neurological Society, October, 1896.

As the vertebral bodies were not removed, it could not be determined whether they were fractured or not; no evidences of this were noticed from examination *in situ*.

The accident occurred on a Monday, and the patient lived until the following Saturday.

From the picture given by Gowers [*] of the relations of the vertebral column to the cord, we would expect to find the lesion caused by dislocation of the eleventh upon the twelfth thoracic vertebra greatest in the first, second, and third lumbar segments. This was exactly the area injured.

The microscopic findings consist of displaced fibres in one portion of the cord, numerous hæmorrhages, altered blood pigment, masses of granular corpuscles, necrosed tissue, swollen axis cylinders, tumefied ganglion cells, and round-cell infiltration. The spinal roots contain a few swollen axis cylinders, and the medullary sheaths do not stain quite as deeply with hæmatoxylin as do those of normal fibres. The blood-vessels everywhere are much dilated.

The case reported recently by A. Westphal [†] has many features in common with the case which forms the subject of this paper. His patient fell from the second story to the pavement in a delirium of fever. After the accident the movements of the upper extremities were free and the lumbar portion of the spine was very sensitive to pressure, although no deformity was present. Complete flaccid paraplegia of the lower limbs, with absence of the knee-jerks, was observed.

At the autopsy the bodies of the first and second lumbar vertebræ were found broken, and the vertebræ were dislocated, but nowhere, as in our case, was there pressure on the cord and its membranes. The muscular tissue at the seat of fracture was infiltrated with blood. The dura was intact, and there was no hæmorrhage within it. The form of the cord was well preserved. The greatest alteration was observed in the sacral region. When microscopical examination was made the ganglion cells were found altered, swollen, and rounded off; in some the nucleus was displaced, in others there was no nucleus or no nucleolus. There was rarefaction of the gray and white matter, and small hæmorrhages were found in the gray substance, especially about the central canal and in the white matter. In the sacral cord the normal outlines of gray and white matter were altered and could not be fully defined. In this case, as in our own, dislocation of the vertebræ occurred. This explains the displacement of fibres, but many of the other changes must be considered as the direct result of the concussion to the spinal cord, as Westphal himself says, in regard to his case. His patient lived seven days after the accident, ours survived the trauma five days.

Westphal states that most of the cases of traumatic myelitis known to him in the literature concern persons in whom death occurred immediately or else a long time after the accident, and are unfitted for the study of the early morbid changes. His case, therefore, and ours present such alterations as occur within a week. In a paper published by one of us [*] the changes which occur after thirty-six hours were mentioned. These consist mainly of swelling of the axis cylinders.

The two regions of the spinal column which seem to be especially liable to fracture are the lower cervical and the lumbar. In the paper already referred to (Spiller, *loc. cit.*) a case of fracture in the former of these two regions was reported, and the hæmorrhage within the gray matter was described. In that case the anterior horns were most involved, in this one the left posterior horn in the eleventh and twelfth thoracic segments was destroyed.

Goldscheider and Flatau [†] have shown by injecting staining solutions into the thoracic region of the spinal cord of the living and dead animal that the fluid, if injected into the anterior horn, has a tendency to pass to the posterior horn and to ascend in this; if injected into the posterior horn it is not apt to enter the anterior. This may be explained by difference in the formation of the two parts. From these experiments we must expect to find extensive hæmorrhage in the posterior horns more frequent than in the anterior. Lamy [‡] has noticed after the injection of inert powder into the vascular system of the spinal cord that the emboli are more apt to obstruct the branches of the anterior spinal system which nourishes the gray matter, and even when they invade the entire vascular system the lesions are greater in the gray matter. After the vessels have been obstructed red softening of the gray matter almost invariably occurs. A central cavity may result from the softening, and in a dog he actually found such a cavity after the expiration of three weeks, which "resembled greatly syringomyelia." Cicatricial tissue may replace the necrotic tissue and present the appearance of an old hæmorrhagic focus.

It is not our purpose to discuss the possibility of a traumatic origin of syringomyelia; that has already been done (*loc. cit.*).

Emboli always follow the most direct current of blood, and these experiments of Lamy would strengthen the view already held, that in the vascular system of the cord the flow of blood is greater and more direct in the distribution to the gray matter.

Pfeiffer [#] has published recently an interesting *résumé* of the views held in regard to spinal hæmorrhage.

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[*] Gowers. *Diseases of the Nervous System* (English edition), vol. i, p. 163.

[†] Westphal. *Archiv für Psychiatrie*, xxviii, Heft 2, p. 554.

[*] Spiller. *International Medical Magazine*, April, 1896.

[†] Goldscheider and Flatau. Abstract in the *Semaine médicale*, 1896, Nos. 23 and 25.

[‡] Lamy. *Comptes rendus des séances de la Société de biologie*, July 25, 1896.

[#] Pfeiffer. *Centralblatt für allgemeine Pathologie*, September, 1896.

Every neurologist has seen the cases of "railway spine" in which paraplegia or paraparesis, with increased reflexes, plays an important rôle, and usually such conditions are considered as functional. Frequently, however, the suspicion arises that after all we may be too quick in forming our diagnosis, and that possibly there is in some of these cases an organic change. The signs presented are often those which a lesion of the thoracic or cervical cord would give. Such a case is reported by Dercum.* The patient fell some thirty feet, and the resulting sensory and motor disturbances Dercum ascribes partly to actual physical injury, partly to traumatic neurasthenia. He speaks especially of the violence done to the muscles and the vertebræ after such serious accidents. Certainly the probability of the existence of these organic changes must be apparent to every one. But have we not reason to think that the cord also suffers from such serious traumata? When the damage is so great that the vertebræ are fractured death frequently occurs, and we have an opportunity to study the spinal lesions. There are likewise cases of spinal hæmorrhage from trauma in which the vertebral column is not fractured, but these are rare. Usually in the milder forms of traumatism the patient lives on, more or less of a cripple, and the opportunity for microscopic study is not given. Such a case as the one published by Westphal, or as the one by Higier,† in which the symptoms indicated a lesion of the conus, while injury of the eleventh and twelfth thoracic vertebræ was observed therefore above the portion of the cord affected; or as the case we report, in which a large portion of the changes of the spinal marrow were probably not the result of fracture of the vertebra, but of the force which was great enough to cause the fracture—such cases must cause us to believe that even less severe trauma may produce cord lesions, though of less degree. If the paraplegia disappears after a period, it is quite possible that organic lesions, such as small hæmorrhages and areas of necrosis, may have been present. The recuperative power of the spinal cord is astonishing. Probably the most remarkable case in evidence of this is the one given by Charcot ‡ with illustrations. The spinal cord in a case of Pott's disease at one part was only one third the normal size, or about the size of a goose quill, and was much sclerosed. Ascending and descending degeneration was well marked, but the functions, both sensory and motor, in the lower limbs had been perfect. The nerve fibres in this compressed portion were much below the normal number, and the gray substance was represented only by a single horn containing a few cells.

The gray matter is more apt to be involved by a hæmorrhage than the white. We refer to Lamy's experiments in this connection. Perhaps hæmorrhage may give the explanation of paresis and increased reflexes in some cases, acting by pressure on and not by destruction of the pyramidal fibres.

Indeed, experience has shown that not only the centre of the cord is more apt to suffer in trauma, but the centre of the cauda equina is subject to the same laws. Bruns * states that in tumor or trauma of the cauda, even at the upper part, the sacral plexus suffers more than the lumbar, and at first usually it alone is affected.

When in many of these mild cases of "railway spine" restoration of function occurs, it is probably frequently due to absorption of the hæmorrhages, relief of pressure, possibly vicarious action of the nerve fibres still sound, and restoration of function to paralyzed fibres.

Undoubtedly in many of these cases there is an element of neurasthenia, but it seems to us that sometimes too much is classed under neurasthenia. Obersteiner † has abstracted a case of spinal concussion published by Struppler. The patient died five weeks after a fall on the back. The lesions found in the cord were softening, diffuse degeneration almost throughout the entire length of the cord, and descending degeneration of the lateral pyramidal tract. Obersteiner remarks that in consequence of the teaching of Charcot concerning traumatic neurosis, the opinion held by himself and others regarding organic changes in some cases of spinal concussion has been forgotten. He, as far back as 1879, reported the microscopic examination of a case of spinal concussion.

Schmaus ‡ has examined the cord from some of these cases of traumatic back at different periods after the occurrence of the accident, and has found very positive changes—such as areas of softening, accumulations of granular corpuscles, gliosis, cavity formation, primary degeneration of the pyramidal tracts, and, in one case, round-cell infiltration. In one case he speaks of infraction of the vertebral column, but the alterations he describes were also found when the vertebral column was uninjured, and these alterations are similar to the changes noted by us.

Schmaus produced concussion of the spine in animals. He found in these cases swollen axis cylinders and some destruction of the myelin. In one case he observed a focus of softening, in two cases gliosis in the gray matter, but rarely did he find hæmorrhage of any amount. The spinal vessels in all his experiments were congested. From these investigations it was positively determined that organic lesions may follow spinal concussion, and it was seen that the alterations produced experimentally represented earlier stages of those changes which he had found in man.

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* Dercum. *The Journal of Nervous and Mental Disease*, 1892.

† Higier. *Deutsche Zeitschrift für Nervenheilkunde*, vol. ix, 3–4.

‡ Charcot. *Œuvres complètes*, vol. ii, p. 103.

* Bruns. *Archiv für Psychiatrie*, xxviii, Heft 1, 1896.

† Obersteiner. *Wiener klinische Wochenschrift*, No. 30, 1896, p. 694, and *Medizinische Jahrbücher*, 1879.

‡ Schmaus. *Münchener medicinische Wochenschrift*, 1890, p. 485, and Virchow's *Archiv*, 122, 1879.

According to Schmaus, the important change is direct traumatic necrosis of the axis cylinders. He believes that if the trauma is not very severe the fibres are only functionally altered and may recover, and even if the trauma has been very violent the degeneration found at the examination does not represent all the fibres which have been deprived of function, for certain of these are in the earlier stages of the degenerative process. Bikeles * also has found destruction of the myelin sheaths after concussion of the brain in animals.

While we are not treating of commotio cerebri, we may, nevertheless, mention that Koch and Filehne, Witkowski, and Polis have shown that cerebral concussion may exist without visible organic changes. On the other hand, Duret, Bright, Rokitansky, Nélaton, Beck, etc. (quoted by Michél †), have found numerous capillary hæmorrhages in the brain, and have attributed the symptoms observed to these. It is quite possible that some of the cases in which organic lesions were absent were not studied by the finer methods of microscopic technique, as Michél suggests. This author also calls attention to the fact that Bollinger first showed that the signs of commotio cerebri may not develop for some time after the trauma. The trauma causes necrosis and alteration of the vessels, and in consequence of these changes late hæmorrhages occur.

Interesting in this connection is the case reported by Hirschl.‡ Dementia and hemiatrophy of the tongue developed in consequence of trauma. Both conditions were supposed to be due to minute hæmorrhages. The statement that the hemiatrophy of the tongue was the result of organic changes will hardly be disputed.

FURTHER EXPERIMENTS IN SEARCH OF
THE GERM OF SEBORRHOIC ECZEMA.

By WILLIAM HUTCHINSON MERRILL, M. D.,
PEPPERELL, MASS.

If seborrhoic eczema is a disease caused by a definite specific germ one would naturally look for it in its most typical form on those portions of the skin which offer to it the proper food and environment for its growth and extension. It is probable, however, that the germ would be present more or less constantly in the scales formed on the surface of the eruption, as they exist only as a result of bacterial activity on the parts immediately beneath them, and it is through their bacteriological examination that the following facts have been obtained, a corresponding study of the skin proper in persons suffering from this disease being reserved for a future paper.

The methods used are the same as were employed in the cases reported in the *New York Medical Journal* about a year ago. Although the impossibility of obtaining material makes this collection of cases few in number, yet the results of their examination add a certain amount of corroborative evidence to the conclusions that were drawn from the preceding fifty cases. The scales were carefully collected from the diseased skin—in eleven cases from the scalp, twice from beneath the mustache, three times from beneath the beard, once from the groin, and twice from the sternum. Some of the cases were very mild and of short duration—cases of pityriasis, in which the only signs of the disease would be the light scurfy scales lying on the roughened epidermis; others were stubborn cases of long standing, covering large surfaces of the scalp and body with thick, yellowish-white, greasy, friable scales on a reddened and often shining base. In all, however, germ life of one sort or another existed—bacilli and micrococci irregularly, but diplococci constantly in every case. The ordinary methods of isolation were used and ten varieties of bacteria separated. Of these, two were micrococci, two were bacilli, and six were diplococci. The micrococci were the ordinary forms of pus cocci—the *Staphylococcus pyogenes aureus* and *albus*. They were very plentiful in the scales taken from patients living in New York city, but rarely if ever found in the country cases. The two varieties of bacilli were found in only three cases. Variety A grew in rather large, round, white colonies, with a smooth, slightly convex surface. Only found on the surface of the media and did not liquefy the gelatin. The bacilli were of irregular size, long and short, flexible and intertwined; some in a hanging drop moved across the field with a wavy, sinuous motion.

Variety B grew in colonies of a brownish color, raised and round, with a smooth, glistening surface. After a few days the gelatin slowly liquefied until the colonies floated in pits filled with fluid, or, if in a test tube, the whole surface of the gelatin was liquefied and became turbid and filled with flocculent masses. The bacilli were of varying sizes, from almost an oval to four or five times as long as broad. In a hanging drop they were motionless.

The six kinds of diplococci had the following characteristics:

No. I, in beef-peptone gelatin: The superficial colonies are round, gray-white or nearly white in color; translucent, tough, so that a whole colony can be lifted up and removed without changing its form, resembling closely a small jellyfish—elevated in the centre and thinning toward the circumference. They grow much more luxuriantly when in access to the air, as the deep colonies look like small, oval spots, no larger than a mustard seed, even after from four to six weeks' growth. As the colonies age they grow whiter, until, at the age of six or eight weeks, they often look like a small drop of frosting; the surfaces grow drier and drier until after about twelve weeks they become covered with a curious white, powdery substance. In agar the colonies appear as lumpy, irregular growths, with dull, shining surfaces of the same gray-white color as when growing in gelatin.

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* Bikeles. *Arbeiten aus dem Institut für Anatomie und Physiologie*, Obersteiner, Heft 111.

† Michél. *Wiener klinische Wochenschrift*, No. 35, 1896.

‡ Hirschl. *Wiener klinische Wochenschrift*, No. 26, 1896.

The diplococci are small, oval, and the diameter of each half is from four to seven micromillimetres. They are aerobic and facultative anaerobic, non-liquefying and non-chromogenic.

They were found in only one case—an old, severe case of seborrhœa capitis, which had extended to the eyebrows and nose.

No. II, in beef-peptone gelatin: The superficial colonies are round, light brown in color, growing darker toward the centre, with smooth, slightly raised edges.

The deep colonies, as in No. I, remain very small. They are oval and of a slightly deeper color.

In agar the growth is the same, but the color and outlines are somewhat more pronounced.

The diplococci are round or nearly so, slightly larger than No. I; the fact of their being round would make their diameter longer; aerobic and facultative anaerobic, non-liquefying and non-chromogenic.

Found only in two cases, both seborrhœa capitis.

No. III is the *Diplococcus citreus liquefaciens* of Unna described by Sternberg. It is aerobic, liquefying, and chromogenic.

They were found in five cases.

No. IV, in beef-peptone gelatin: The colonies are small and round, with a smooth, abruptly raised circumference, and of a lemon-yellow color. The gelatin begins to be liquefied almost as soon as the growth can be seen.

In agar the mass of the colony is greater and the surface rougher, while the color is more of an orange.

This diplococcus is liquefying, aerobic, and chromogenic like the preceding, but differs from it in the fact that the yellow color and the liquefaction commence immediately after the growth begins.

They were found in two cases only, both cases of seborrhœa capitis.

No. V, in beef-peptone gelatin: The superficial colonies are round, of a clear white color, with slightly raised surfaces and smooth or somewhat irregular circumferences. The deep colonies remain very small, even after many weeks' growth. They are spherical and of a white color.

In a stab culture the growth is abundant on the surface, overlapping and filling up the aperture made by the needle, and spreading over the gelatin until in two weeks it has a diameter of a third of an inch. The surface is glistening, but somewhat furrowed. As the stab descends deeper into the gelatin the growth becomes more and more scanty until at the point it ceases entirely.

On agar the growth is slower and the surface has a whiter lustre.

On potato growth begins to be visible on the second day. On the fifth day it is cream-white, smooth, slightly raised, with indented borders, and covers a surface about a third of an inch in diameter. At the end of three weeks it has doubled in size, but has become shriveled, dried, and dark in color.

In milk: During the second and third day the milk has a distinctly greenish tinge, which gradually fades, until by the fifth day it has disappeared, leaving the upper layers slightly thickened.

Litmus becomes decolorized if added to the culture media.

This diplococcus is round, aerobic by preference, non-liquefying and non-chromogenic. Each element is from four to seven micromillimetres in diameter.

In the present series of cases this diplococcus was found in fifteen. In the preceding series it was found in forty-seven out of fifty cases, corresponding to the diplococcus of Variety I of that paper.

No. VI. In beef-peptone gelatin the colonies begin to be seen after four or five days as small, round, slightly raised specks of a deep yellow color, with smooth surfaces and smooth or slightly irregular borders. In two weeks the colonies are about an eighth of an inch in diameter. The deep colonies rarely become larger than a pinhead.

On agar the development is nearly the same as on gelatin.

The color is a lighter orange, and the surfaces are lustrous.

On potato, a well-raised growth with irregular borders and a deep golden-yellow color.

In milk, same as preceding. After ten days the upper layers turn the same golden-yellow color.

Litmus is feebly decolorized.

This diplococcus is about the same size as the preceding, but the elements are more oval. It is aerobic by preference, chromogenic, and non-liquefying.

These germs correspond to Variety II in the former series. They were found in seven cases out of the present nineteen, and in forty out of the fifty cases in the preceding paper. Three inoculations were made with each variety of bacillus, and the same number with the first four varieties of diplococci. Every attempt failed. With No. V and No. VI seven inoculations were made, having the following results:

Case I.—A spot on the chest, over the sternum, was first cleaned thoroughly with soap and water and afterward with alcohol, which was finally washed off with boiled water. Two or three hairs were pulled out, and the surface of the skin at that point, for a distance of half an inch each way, was scraped with a sterilized knife, as if vaccinating, stopping just before blood was drawn. Into this spot a portion from a colony of diplococcus No. V was rubbed, using the sterilized loop of a platinum needle. After drying, a gelatinous crust formed resembling collodion. On the fourth or fifth day the edges of this crust began to curl up, and on about the seventh day it fell off, leaving behind a surface covered with small whitish scales, particularly about the edges. A few of these scales were placed directly in a tube of beef-peptone gelatin and pressed into its surface. The tube was placed in a temperature of 70° F. On the fourth day a white growth began to show about the edges of one or two of the scales. This growth was found to consist of pure cultures of diplococci, resembling in morphology and biological characteristics the diplococci used for inoculation. The spot on the chest never changed much in appearance. Its base was only slightly redder than the normal skin and the scales upon it small and scattering. In a week or two it faded and disappeared.

Case II.—Chest treated as before. The spot was less marked than the preceding and the scales were fewer in number. They were sterile. No growth could be obtained from them in beef-peptone gelatin.

Case III.—The crown of the scalp, just where the hair divides, was treated as above, and the same diplococcus used, No. V. The pellicle dropped off, leaving a normal skin behind.

Case IV.—Chest prepared as before. Same diplococcus, No. V, used. After the pellicle dropped the surface seemed slightly scaly and roughened. The base became reddened and thicker, and the scales more numerous and larger. In a week the spot was fully covered with yellowish-white, soapy, friable scales, somewhat heaped up in the centre. It remained in this condition for several weeks, perhaps four in all, and was finally removed by the use of resorcin. Those scales first taken from the spot developed pure cultures of the same diplococcus.

Case V.—As in Case III, the crown of the scalp was chosen, the skin prepared as before, and diplococcus No. VI rubbed thoroughly into the epidermis, particularly about the hair follicles. After the pellicle dropped off and on about the eighth day small, yellowish-white scales appeared, which seemed to grow about the hairs—that is, having the hairs as a centre. The skin, except as above, showed no change. From these scales colonies of a diplococcus developed, showing the same appearance and life history as the original.

In two tubes the cultures were not pure colonies of the white diplococcus, No. V, being mixed with the yellow.

Case VI.—Skin prepared as before. The chest used, and diplococcus No. VI inoculated by rubbing the germs into the skin. The pellicle dropped off, leaving a normal surface, which remained unchanged.

Case VII.—Diplococcus No. V was rubbed into the chest after the usual preparation. The result was negative, the skin remaining normal after the pellicle dropped off.

Three of these seven cases were absolutely unsuccessful. Of the remaining four, Case IV gave a definite result, the spot resulting from or after the inoculation resembling in all points the eruption of seborrhœa. The appearances in Cases I, II, and IV, while not absolutely typical and convincing, still resembled quite closely certain stages of the disease. In the preceding series twelve inoculations were reported, seven of which gave definite results. Out of nineteen attempts, then, eleven gave appearances either exactly resembling or closely resembling the ordinary eruption of seborrhœa, and from scales taken from these spots the diplococci inoculated developed in nine cases. In addition to obtaining a sufficient amount of material it is almost impossible to find subjects for inoculation; a great majority of those willing suffer from the disease, rendering any result uncertain, while those who are free from the disease are unwilling to run the risk of inoculation. The results, therefore, while stated positively, must only have that degree of certainty which the examination of sixty-nine cases can give them. The conclusions then to be drawn are that seborrhoic eczema is caused by a specific germ or germs, in form diplococci, whose life history is most active at the ordinary temperatures and with free access to the air, but which can develop at much higher or lower temperatures and with a scarcity of oxygen—a germ having the characteristics which one would most naturally expect in a disease as prevalent and widespread as seborrhoic eczema.

The literature has been purposely omitted.

REMARKS ON THE TECHNIQUE OF ANALYSIS OF SMALL QUANTITIES OF URINE AS OBTAINED BY THE URETER CATHETER.*

By FREDERIC E. SONDERN, M. D.

On account of the recent advances in catheterism of the ureters, I encroach on your time for a few minutes, to consider a subject of importance in connection therewith.

The fact that this procedure collects urine only as it is voided by the kidney and therefore consumes not a little of the operator's time, and, in not a few instances, the pathological renal lesions calling for its employment are associated with more or less irritable conditions of the bladder, for the sake of both operator and patient it is essential to minimize the time of collection, and therefore to employ methods of analysis requiring the smallest amounts of urine which will at the same time be consistent with thorough work.

Owing to the kindness of Dr. Willy Meyer, who has intrusted this class of work to me, I have been able to satisfy myself of the efficacy of the following technique, which I take the liberty of recommending under the circumstances cited.

While I have found that six cubic centimetres form the smallest practicable amount required, it is, however, possible to use even less by carefully diluting the amount at hand, as would be indicated if for some reason a larger amount could not be obtained; and if ten cubic centimetres can be secured the work is even more easily done.

For the purpose of collection I use two glass tubes with stoppers ground in, marked respectively "Right" and "Left." These, after thorough cleansing, are sterilized in the usual manner and placed in a small box for safe transportation. On the back of the latter is a label calling for information as to the time required to collect the contained quantity from each kidney, and such other remarks as may be of value.

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* Read before the German Medical Society of the City of New York, April 6, 1896.

Granted that we have six cubic centimetres in one of the sterile tubes, or, as before stated, if the amount is smaller, that an accurate dilution has been made, my method of procedure is as follows:

This entire amount is poured into the receptacle of a Westphal's specific-gravity balance; and I may state that the apparatus is a very accurate one, far more so than the better class of urinometers—it is not possible to obtain one of the latter that will work with anywhere near such small quantities of fluid as we are considering here.

After noting the gravity indicated by the balance with the use of a series of weights, the sediment of the whole quantity is obtained by means of a centrifugal device. For this purpose one of the many forms of apparatus now on the market may be used. As to a centrifugal machine run by hand power, I prefer the one at present made by Paul Altmann, of Berlin, and think it meets with the favor of the most skeptical; by means of it a maximum number of revolutions is obtained with a minimum of work. I believe the best results follow a speed not excessive and continued for a longer period than otherwise.

For this as well as for general purposes I still prefer the constricted centrifugal tube, which I have used in the laboratory of Dr. A. Jacobi as well as in my own for the last three years, for reasons which I enumerated before this society several years ago.

The sediment thus obtained is sufficient not only for the routine microscopic examination, in which I include the presence or absence of blood, pus, mucus, casts, epithelium derived from one or other portion of the tract traversed by the specimen in question, and all the crystalline or amorphous deposits; but after this has been made the same can be used for staining for pathogenic organisms or such other purposes as the case in question may indicate (chemical tests to corroborate diagnosis of crystalline or amorphous deposits, etc.). The remaining specimen is then carefully poured through a small filter, and after the reaction has been determined at least five cubic centimetres remain. Of this quantity one cubic centimetre is used for Heller's cold nitric-acid test for albumin, or the heat and acetic-acid test, as the analyzer may prefer; one cubic centimetre for Esbach's picric-acid test to corroborate one or other of the former. If albumin has been found, the remaining three cubic centimetres are then boiled and the former filtered off.

One cubic centimetre is then used for the relative determination of urea by means of the Squibb or Doremus apparatus, either of which answers every purpose.

Half a cubic centimetre, properly diluted, serves for the sugar test, for which, at present, I prefer the Whitney reagent, principally on account of the small amount of urine required and the fact that a quantitative result is obtained at the same time. Deducting shrinkage, one cubic centimetre now remains, which can be used for an approximate estimation of the chlorides present or for one or other chemical test which the condition in question may indicate.

After the specimen obtained from each kidney has been thus manipulated and the results have been noted, it is an easy matter to draw logical conclusions as to the condition of each organ.

Before the advent of the ureteral catheter an approximate estimation as to whether any given renal affection was unilateral or bilateral—a matter of the gravest import to the surgeon—was often attended with the greatest degree of uncertainty; and every one who has struggled with that question hails catheterism of the ureters with pleasure, for by means of it there is no difficulty in determining the relative functional ability of each kidney and thereby learning the indications or counter-indications to surgical operation.

Bacteriological researches by means of cultures made from the specimens collected in the sterile tubes in the aseptic manner in which surgeons are in the habit of working may be of much value in determining the ætiological factors of the pathogenic conditions in question; but to this I should prefer to invite your attention at some later date.

I will not intrude on your time by considering in detail the specimens of this character which have come under my observation, but for the purpose of corroboration I would ask your attention to the principal points of one of them. From the right kidney nine cubic centimetres of urine were obtained in fourteen minutes; odor slightly offensive; specific gravity, 1.004; urea, 0.005 of a gramme in a cubic centimetre; albumin, approximately one fourth per mille, by weight; chlorides, 0.0025 gramme in a cubic centimetre. Microscopically: Pus and tubular plugs of the same; mucus; hyaline, granular, and epithelial-studded casts; groups of epithelial cells of the renal pelvis; considerable uric acid in crystals; also casts of sodium urate.

From the left kidney eleven cubic centimetres of urine were obtained in fourteen minutes; odor normal; specific gravity, 1.008; urea, 0.01 gramme in a cubic centimetre; no albumin; chlorides, 0.005 gramme in a cubic centimetre. Microscopically: No renal elements.

In this instance nothing is simpler than the conclusion that the left kidney is normal; that in the right there is a pyelonephritis, probably caused by uric acid, stone, or gravel. An estimate on the percentage of the excretory work done by each kidney, based on the amount of urea and chlorides excreted by each in a given time, would be: Right kidney, thirty per cent.; left kidney, seventy per cent. This, in connection with the clinical history, makes such a complete and positive diagnosis absolutely unequaled by any procedure which has hitherto been at our service.

An Honorary Degree.—It is announced that the University of Aberdeen has conferred the degree of LL. D. on Dr. Alexander J. C. Skene, of Brooklyn.

THE TREATMENT OF DIPHTHERIA.

By J. B. STAIR, M. D.,
SPIRIT LAKE, IOWA.

In noticing the article of Dr. Chapman in the *Journal* for the 19th of December, in which he seems to cast aside with some impatience the antitoxine treatment for diphtheria, I am prompted to give my experience in its favor, though I appreciate the fact that it is limited. In this section there has been no epidemic of diphtheria for several years, an occasional case here and there contributing to the total, though the average of severity has, I think, not been below the usual standard; and I have in my diphtheritic cases included so-called membranous croup, believing the identity of that malady with diphtheria to be undoubted. Indeed, my conviction of the truth of this has been strengthened since using the antitoxine treatment. In the eighteen months covering my employment of the antitoxine I have treated thirty cases of diphtheria (and I have carefully eliminated all cases of a doubtful character, in order to have a clean record), including two of so-called membranous croup. There were twenty-eight recoveries, two deaths. I have used the antitoxine in fourteen cases, injecting the remedy in these fourteen cases twenty-two times. I have never used the serum in a case of doubtful character, nor have I done so for its immunizing effect. The first case in which it was employed was one of membranous croup, with prompt recovery as a result. Having lost in the preceding year six patients with the same disease—all I had—after having faithfully pursued the usual treatment, I was naturally gratified; in fact, in this case I felt it my duty, before using the antitoxine, to inform the parents that the patient would probably not survive twenty-four hours. The only ill effect I have known followed in this first case and one other—viz., an eruption similar to that of measles, which passed off in a few hours. The last case that came under my care was also one of membranous croup. I saw it on the fourth day of the disease, in that desperate state we all know so well and once dreaded so much—Nature almost exhausted, death very near. An injection of six hundred units was at once given. The disease was checked. Another was given the following morning; one again of the same strength in the evening, twenty-four hours after the first. Progress toward recovery, while not rapid, was unmistakable twelve hours after the first injection.

The two cases in which death occurred were of pharyngeal and nasal diphtheria; the patients were moribund when first seen, and died a few hours later.

I have invariably used Behring's preparation, *white label*, and have selected the inner side of the thigh as the locality, carefully avoiding the smallest blood-vessel, going no deeper than the skin, and passing the needle horizontally underneath it.

Therapeutical Notes.

The Treatment of Fissure of the Anus with Cocaine and Ichthyol.—In the *Gazette de gynécologie* for February 1st the following method is attributed to M. Jules Chéron, who says that it has invariably given good results in all cases in which he has had occasion to employ it (*Revue des maladies des femmes*): After the anus is partly opened and the fissure discovered, a small tampon of absorbent cotton saturated with a one-per-cent. solution of cocaine hydrochloride is applied. At the end of five minutes local anæsthesia is obtained, and the fissure may be touched with pure ichthyol. These applications are repeated on the following days. At the fourth or fifth application the tampon of cocaine is introduced as far as the internal sphincter, and at the end of five minutes it is possible to make a slight dilatation of the anus with Nélaton's dilator. In this way the fissure is distinctly exposed to view and can be thoroughly touched with ichthyol.

In proportion as cicatrization advances dilatation is more easily effected, and may be pushed still further in such a way as to cause the disappearance of stricture of the sphincter, which so frequently complicates fissures of long standing.

Recent fissures may be cured by ten applications of this treatment, but old fissures, the borders of which are more or less callous, require a longer time for recovery; it is rarely necessary, however, to make more than twenty applications.

A Paste for Eczema.—The *Journal des praticiens* for February 13th gives the following formula:

℞	Zinc oxide, Talc, } each	10 parts;
	Olive oil, Limewater, } each	30 "
	Wool fat	20 "
	Tincture of benzoin	1 part.

M.

An Ointment for Frostbite.—The following formula is published in the *Journal des praticiens* for February 13th:

℞	Camphor	23 grains;
	Peruvian balsam	7½ "
	Oil of sweet almonds	2 drachms;
	Wool fat, Rose water, } each	5 "

M.

Peronine in the Treatment of Phthisical Cough.—This is described as the hydrochloride of the benzyl ether of morphine. Dr. C. Schröder (cited in the *Gazette hebdomadaire de médecine et de chirurgie* for February 14th) has compared it with codeine phosphate in the treatment of the obstinate cough of phthisis, and concludes that it occupies a place intermediate between codeine and morphine. He used it in twelve cases, in doses of from 0.31 to 0.62 of a grain. In eight cases it caused a notable diminution of the cough, in two cases larger doses were required, and in two others it failed completely. Given in doses as large as 1.24 grain, it does no harm; in larger amounts, it may provoke nausea and have a decided constipating effect. In two cases sweating and difficulty of expectoration were noted, but in all the cases it produced a calmer sleep than that of codeine.

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NEW YORK, SATURDAY, MARCH 6, 1897.

COMMON SENSE ON THE ALCOHOL QUESTION.

However temperate a man's own views may be on any such question as that of the use of alcohol, he is tempted to lean in his public utterances toward the contention of fanatics. He may not go to the extremes that they contend for; indeed, he is almost sure not to. But he is apt to make statements by which they can strengthen their case with the public and especially with the legislators. It is refreshing to notice a recent exception in the case of Mr. Pellew, of the department of chemistry of Columbia University, who recently concluded a course of lectures in the Museum of Natural History on the subject of the good and bad effects of alcohol.

Mr. Pellew stated without reserve, and backed up his statement by citing the most careful observations and experiments of well-known investigators, that "there was no doubt that, even in health, a small amount of alcohol, if given in divided doses, could be burned up in the blood and serve as food, without producing any injurious effects." We are quoting from the *Sun's* report of Mr. Pellew's last lecture. He went on to say that in diseased conditions, where nutrition was impaired, alcohol could be given in greatly increased amounts without any intoxicating effect, and was then of enormous value. An ounce of it, he said, gave as much heat as seven or eight ounces of beef, and that without having to undergo the processes of digestion and assimilation. In other words, it burned, "as in a lamp, without wasting the wick."

On the other hand, the popular notion that alcohol will keep up the heat of the body under exposure to great cold was declared to be a mistake. Alcohol, said Mr. Pellew, actually reduced the temperature of the blood, but it was of service to restore equilibrium after the exposure was over. The lecturer was not backward in depicting the horrors of drunkenness, to which, of course, no reasonable man can shut his eyes. He spoke of the dram-drinking habit as a nervous disease rather than a vice. He properly insisted that, in health, the only good effects of alcohol, "except, indeed, its action as a 'scavenger of mankind,'" came from its moderate use.

To show the astonishing amount of intemperance in the so-called temperance doctrines at present promulgated, Mr. Pellew read passages from the books on "physiology" to which the law now requires the teachers and pupils in the public schools of the State of New York to devote a large proportion of their time. He pointed out the "absurd doctrines, not to say absolute falsehoods," which in many cases were thus crammed into the children's heads. The *Sun's* account concludes as follows: "In his opinion, it is confusing to a child to learn that it is a sin to pick a pocket and to drink a glass of wine, and he suggested the state of mind of a Teutonic father or grandfather when his young hopeful would read to him, from his school books, how the 'use of beer, more than of any other liquid, tends to make the drinker selfish, cruel, and brutal.'"

THE MOSQUITO AS A VEHICLE OF MALARIA.

In the *Presse médicale* for January 20th there is an abstract, by M. P. Langlois, of an article by M. Laveran which appeared in a recent number of the *Revue d'hygiène*, entitled How is Paludism Acquired? (*Comment prend-on le paludisme?*). M. Laveran takes the ground that if we look upon the transmission of malaria as aerial only, there are certain localities close to sources of malaria the freedom of which from infection can not be explained. He thinks the transmission by drinking-water is more probable. Numerous travelers, he says, have succeeded in traversing a malarious country with impunity by drinking only boiled water, and villages have witnessed the disappearance of fever as the result of their securing a supply of pure water. And, yet, the experimental investigations of Marino, Leri, and Baccelli would lead one to reject the theory of water-borne malaria.

M. Laveran has long been of the opinion that malaria is transmitted through the agency of the mosquito. The strange instances of immunity mentioned in the preceding paragraph may be explained, he says, if we accept the theory of the intervention of mosquitoes, insects that swarm in very limited localities. He cites Constantine as being free from fever and from mosquitoes, although it overlooks the valley of the Rummel, which is malarious and abounding in mosquitoes. The same relation, he remarks, exists between the old and the new town of Bône. Draining the soil leads to the disappearance of mosquitoes. If it is dangerous to go to bed with the window open or to go out at certain hours, it is because these insects get into the rooms or are more active at those hours.

But how, by what mechanism, asks M. Laveran, is the transmission effected? He cites Manson, who has so well studied the part played by mosquitoes in the transmission of the *Filaria sanguinis hominis,* as admitting that the mosquito plays the same part in conveying the *Plasmodium malariæ.* By sucking the blood of a person affected with malarial fever the mosquito becomes contaminated with the pathogenic organism. Within the insect's organism the hæmatozoon undergoes a series of transformations which enable it subsequently, on the death of the insect that bears it, to resist various destructive agencies; and in this condition it has ways of reaching the human organism, whether by water or by the air. According to this theory, then, both air and water still play important parts.

Mendini and Bignami, says M. Laveran, look upon the mosquito as the direct agent; they say it takes the hæmatozoon from the soil and inoculates man. M. Laveran thinks that this mode of transmission is not uncommon in the case of a number of other diseases, such as tuberculosis, yellow fever, and cholera. The bite of the tsetse, the dreaded *Glossina morsitans* of Central Africa, would not be so dangerous, he adds, but that, in reality, it is a veritable inoculation of special hæmatozoa.

Malarial disease, says M. Laveran, may be communicated from one person to another by intravenous injection, but its transmission by subcutaneous injection is not so certain. It may be conveyed from mother to fœtus, but not from nurse to nursling.

MINOR PARAGRAPHS.

A JOURNAL OF MARITIME AND TROPICAL MEDICINE.

This heading, we suppose, about expresses the scope of a new journal entitled *Archiv für Schiffs- und Tropen-Hygiene, unter besonderer Berücksichtigung der Pathologie und Therapie,* the first number of which, dated January, 1897, has just reached us. It is edited by Dr. C. Mense, of Cassel, and published in that city by T. G. Fisher & Co. It is a bimonthly. The first number contains eighty-eight octavo pages of reading matter. Among the original communications are the following: Examination of the Blood in Tropical Fever Regions, and its Practical Significance, by Dr. Albert Plehn; A Review of the Treatment of Maritime Commerce in Different States in the Prevention of Imported Pestilence, by Dr. Nocht, the port physician of Hamburg; Coolie Hospitals on the Northeastern Coast of Sumatra, by Dr. L. Martin; and New Investigations of the Ætiology and Clinical Course of Beri-beri, by Dr. Max Glogner, of Samarang, Java. The new journal is well printed, but it could be much improved in mechanical get-up by stitching the sheets, and in facility of reference by the use of running titles.

SUDDEN BLANCHING OF THE HAIR.

The *Progrès médical* for February 13th alludes to the case of a man who was the director of a pottery during the Franco-Prussian war. The Prussians swarmed into the pottery and seemed about to carry away everything. He pleaded with them, in order to save as much as possible, complaining bitterly because they had taken their horses into the warehouses filled with crockery and china. Twice they pressed him to the wall, and twice a Prussian officer, having received a Masonic sign from him, intervened and saved him. During the following night his hair turned completely white, as his wife afterward wrote.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 2, 1897:

DISEASES.	Week ending Feb. 23.		Week ending Mar. 2.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	1	8	5
Scarlet fever	176	9	188	9
Cerebro-spinal meningitis	7	4	4	3
Measles	131	11	157	11
Diphtheria	188	34	227	23
Croup	11	4	5	2
Tuberculosis	164	135	290	132

Pulmonary Tuberculosis and Chest Measurements.—Dr. Edward Playter, of Ottawa, Ontario, has issued the following circular, addressed "to members of the medical profession individually, in the interest of medical science":

"As there is evidence tending to prove the theory that all persons predisposed by heredity to consumption have a respiratory capacity or action insufficient for good vigorous health, probably a proportionately small chest with insufficiency of lung membrane, and that the predisposition is mainly or primarily due to this cause; in other words, that the insufficient respiratory function is the special primary feature of the predisposition (a condition which may be practically acquired by habit, occupation, etc.), I desire the co-operation of the profession in an endeavor to help to establish, by means of collective investigations, the correctness or otherwise of this theory.

"In this behalf I hereby ask all physicians who have patients predisposed to, or in the early stage of, consumption to send to me on a postal card (will suffice) the information below indicated. As soon as I can study and collate the replies I shall make the results known to the profession.

"Give (1) name (or initials); (2) sex; (3) age; (4) occupation; (5) height; (6) weight (average when in usual state of health); (7) circumference of the chest on a level with the sixth costo-sternal articulation when momentarily at rest after an ordinary expiration, and also (8) after habitual natural expansion or inspiration (which last [8] usually exceeds the first measurement, expiration [7] by an increase of only about one fourth of an inch); finally (9), the circumference after a *forced* expiration and also (10) after a forced inspiration (these two measurements, 9 and 10, varying or showing a range of from an inch and a half to four inches). The patient should, of course, be as calm as possible, and had better, usually, practise the *forced* breathing for a few acts before these two last measurements, 9 and 10, are taken.

"To be of value, all four measurements should be taken as carefully, accurately, and free from haste as possible.

"Any further information, in brief, as to degree of heredity (family history) in cases, *prominent* symptoms, loss in weight, cough, dullness on percussion, etc., or any remarks, will be a decided advantage.

"Measurements of two cases, or several, or the average, could be given on one card."

The Harvard Medical Alumni Association.—The Association's Bulletin No. 10 is a catalogue of the members. The number of members is 1,217. More than two thirds of them—891—live in Massachusetts, of whom 452 live in Boston. The rest are widely scattered, however; we find 58 in the State of New York (including 36 in the city), 38 in Rhode Island, 29 in New Hampshire, 23 in Maine, 21 in California, 18 in Connecticut, and the same number in Illinois; 10 each in Minnesota and Colorado; 9 in Vermont, 8 in Michigan; 7 each in Pennsylvania, District of Columbia, and Nova Scotia; 6 in Maryland; 5 each in Ohio, Missouri, and New Brunswick; 3 each in New Jersey, Wisconsin, and Washington; 2 each in North Carolina, West Virginia, Kentucky, Indiana, Iowa, Kansas, Oregon, Prince Edward Island, and Mexico, and 1 each in Virginia, South Carolina, Florida, Tennessee, Texas, Montana, Nebraska, Utah, Ontario, Australia, Argentina, Chile, Italy, Newfoundland, and Turkey.

The Jefferson Medical College.—At a recent meeting of the board of trustees, Dr. J. Chalmers DaCosta was elected clinical professor of surgery. Dr. DaCosta has been connected with the college for many years, and has recently been demonstrator of surgery and chief of the Out-patient Department. The new appointment is made in recognition of his long service and valuable contributions to surgical literature.

The Alumni Association of Mt. Sinai Hospital will hold a reunion at the Tuxedo, East Fifty-ninth Street and Madison Avenue, on Tuesday evening, March 9th. Dr. A. Jacobi will give an address entitled Hereditary Syphilis; its Present Status.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 21 to February 27, 1897:*

WOODSON, ROBERT S., First Lieutenant and Assistant Surgeon, Jackson Barracks, Louisiana, is granted leave of absence for two months, to take effect on or about March 5, 1897.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending February 27, 1897:*

ARNOLD, W. F., Passed Assistant Surgeon. Ordered as a member of the medical examining board, League Island Navy Yard.

ATLEE, L. W., Passed Assistant Surgeon. Detached as a member of the medical examining board, League Island Navy Yard.

BRADLEY, G. P., Surgeon. Detached from the U. S. Steamer Indiana, March 3d, ordered home, and placed on waiting orders.

FEREBEE, N. McP., Surgeon. Ordered to the U. S. Steamer Indiana, March 3d.

SMITH, G. T., Passed Assistant Surgeon. Detached from the U. S. Steamer Adams on reporting of his relief about March 2d, ordered home, and granted leave of absence for two months.

STONE, L. H., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, March 15th, and ordered to the U. S. Steamer Adams.

Society Meetings for the Coming Week:

MONDAY, *March 8th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Philadelphia Pædiatric Society; Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private); Maine Academy of Medicine and Science (Portland).

TUESDAY, *March 9th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Kings County, N. Y., Medical Association; Buffalo Academy of Medicine (Section in Medicine); Medical Societies of the Counties of Rensselaer and Ulster (quarterly), N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *March 10th:* New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital; Doctors' Club of the City of New York; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Pittsfield, Massachusetts, Medical Association (private); Worcester, Massachusetts, District Medical Society (Worcester); Philadelphia County Medical Society.

THURSDAY, *March 11th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Societies of the Counties of Cayuga and Cortlandt (quarterly), N. Y.; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *March 12th:* Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; College of Physicians of Philadelphia (Section in General Surgery); Northern Medical Association of Philadelphia; Medical Society of the Town of Saugerties, N. Y.

SATURDAY, *March 13th:* Obstetrical Society of Boston (private).

Answers to Correspondents:

No. 455.—Our impression is that such an indorsement would be recognized only in the States that have no examining board.

No. 456.—Dr. David Newman (*On the Diseases of the Kidney Amenable to Surgical Treatment*, London, 1888) gives the mortality as thirty per cent.

Births, Marriages, and Deaths.

Married.

ADLER—LEVY.—In Providence, Rhode Island, on Wednesday, February 24th, Dr. H. B. Adler, of New York, and Miss Rose Levy.

BAUMAN—BOOTH.—In Shreveport, Louisiana, on Wednesday, February 24th, Mr. Sidney Bauman and Miss Mamie A. Booth, daughter of Dr. Augustine R. Booth.

FISCHLOWITZ—WISE.—In New York, on Tuesday, February 23d, Dr. Gustav G. Fischlowitz and Miss Ella Louise Wise.

MOORMAN—GIVENS.—In New Orleans, on Thursday, February 18th, Mr. Mercer Moorman and Miss Adrienne Givens, daughter of Dr. A. Givens.

TAM—LA PRADE.—In Mobile, on Wednesday, February 24th, Dr. S. Springer Tam and Miss Emma Sidney La Prade.

WEBER—VOLKMAN.—In New York, on Thursday, February 25th, Dr. Leonard Weber and Miss Meta Volkman.

WOOD—COWLES.—In Fairport, N. Y., on Wednesday, February 24th, Mr. A. B. Wood and Miss Addie Cowles, daughter of Dr. J. B. Cowles.

Died.

CANEDY.—In Shelburne Falls, Massachusetts, on Friday, February 19th, Mrs. F. J. Canedy, wife of Dr. Francis J. Canedy.

CRAIG.—In Geneseo, N. Y., on Sunday, February 21st, Dr. John Craig, aged eighty-eight years.

HUNTINGTON.—In City Island, N. Y., on Sunday, February 28th, Dr. Henry K. Huntington, in the fifty-second year of his age.

MOSES.—In St. Louis, on Sunday, February 21st, Dr. Gratz Moses, aged eighty five years.

REYNOLDS.—In Chicago, on Sunday, February 28th, Dr. Robert Todd Reynolds, of Montreal, in the eighty-fifth year of his age.

THOMPSON.—In Bogue, Mississippi, on Friday, February 26th, Dr. Alexander E. Thompson.

Letters to the Editor.

THE ADIRONDACKS.

SYRACUSE, N. Y., *March 1, 1897.*

To the Editor of the New York Medical Journal:

SIR: Inasmuch as the subject of an appropriation for the purchase of additional lands within the proposed State Park is likely to be brought up soon at Albany, it seems to me quite proper that the medical profession should interest itself in such action.

It has long been conceded that the Adirondack region is valuable as a health resort during the summer months, and my personal experience teaches me positively that it is of equal value for tuberculous subjects during the fall and winter months. In fact, without an exception, my patients have made more rapid and permanent improvement during the cold seasons.

I send my patients with laryngeal tuberculosis to that region at all times of the year, without fear that the so-called rigorous climate will be too severe for them.

In an article read before the Central New York Medical Association, October 15, 1895 (*Buffalo Medical Journal*, December, 1895), entitled Aural, Nasal, and Laryngeal Tuberculosis, with Special Reference to the Adirondacks as a Winter Health Resort, I suggested such a course, and I am pleased to note that several general practitioners in this city are following the same plan with their cases of early pulmonary tuberculous trouble, and are finding that the Adirondack section is a most excellent winter health resort. It is an all-the-year-round sanatorium, and the forests ought to be preserved.

Action was taken at the last meeting of the Syracuse Academy of Medicine, held on Tuesday evening, February 23d, urging our representatives from this district to favor a liberal appropriation for the purchase of lands within the proposed boundaries of the Adirondack State Park, and it seems to me that other medical societies would be justified in taking a similar course.

SARGENT F. SNOW, M. D.

VENESECTION AND SALINE INFUSION IN PUERPERAL CONVULSIONS.

YOUNGSTOWN, OHIO, *March 1, 1897.*

To the Editor of the New York Medical Journal:

SIR: In your issue of February 27th appears the abstract of a paper read by Dr. William Warren Potter, of Buffalo, on The Ætiology and Treatment of Puerperal Eclampsia. In his paper he states that the toxæmic theory furnishes the best working basis, and that the surest way of controlling the toxæmia is by an exclusive milk diet. If convulsions are actually present, the prompt emptying of the uterus contributes in every way possible to the preservation of the lives of the mother and infant.

On reading this article it occurred to me that this class of patients might be benefited by the abstraction of a considerable quantity of blood by venesection, to be immediately followed by the infusion of normal saline solution in such quantities as the case seemed to indicate. If the convulsions are due to some poisonous substance in the blood, it may by this means be so diluted as to be less irritating to the nerve centres. I do not remember to have seen anything in the literature on the subject, and should be glad to have it tried and the results reported.

H. E. WELCH, M. D.

Book Notices.

System of Diseases of the Eye. By American, British, Dutch, French, German, and Spanish Authors. Edited by WILLIAM F. NORRIS, A. M., M. D., and CHARLES A. OLIVER, A. M., M. D., of Philadelphia. Volume I. Embryology, Anatomy, and Physiology of the Eye. With Twenty-three Full-page Plates and Three Hundred and Sixty-two Text Illustrations. Philadelphia: J. B. Lippincott Company, 1896. Pp. xvii-7 to 670. [Price, $5.]

THIS is the first complete book of the kind published in the English language. The work will be completed in four imperial octavo volumes of about six hundred pages each. Judged by the first volume, the completed work will compare very favorably with the Graefe-Saemisch *Handbuch der gesammten Augenheilkunde* and with Wecker and Landolt's *Traité complet d'ophthalmologie.*

The opening chapter, on the development of the eye, is a posthumous work of the lamented Dr. John A. Ryder, lately deceased, and is a monument of completeness and accuracy. He shows that the recent studies of Hatschek have confirmed the view that the vertebrate eye is a structure that has arisen immediately from part of the lateral cortex of the embryonic brain. There is scarcely any doubt that the vertebrate eye was functional as such long before it was pushed out from the brain wall as a lateral diverticulum and before the development of an optic stalk.

Ryder's account of the development of the optic tract and its connections, based on the researches of Bernheimer, is very interesting. Investigation of the region of the external geniculate body and the optic tract in embryos, children, and adults shows that the fibres of the tract have a double origin from the external geniculate body, and the latter must therefore be regarded as the true ganglion of origin of a great part of the fibres of the tract. The corpora quadrigemina are far less important as centres of origin of optic fibres than these ganglionic masses are, and the importance of the latter has been much underrated.

The second chapter is on the anatomy of the orbit and the appendages of the eye, by Dr. Thomas Dwight, and is written in the author's usual clear and concise style. Particular attention should be directed to Dwight's description of the capsule of Tenon, as given in his own words, here partially introduced: "As the complications of this membrane are limited only by the perverted ingenuity of those who describe it, let it be understood that in this paper is meant only the capsule around the globe. It is taught by some that the capsule of Tenon is a socket in which the eyeball rotates without change of position, except perhaps that under certain circumstances it may move a minute distance forward or backward. Anatomy shows that this is impossible. It is easy to see that, as Tenon's capsule is closely attached to the globe near the cornea, it is out of the question that the former should stand still while the latter moves in it. Undoubtedly the two move together on the cushion of fat behind them, and perhaps some slight motion may occur between them. The muscles invaginate this membrane."

Chapter III is on the anatomy of the eyeball and of the intraorbital portion of the optic nerve, and is written by Professor Frank Baker. This is an admirable monograph of a hundred and eight pages, and the illustrations are remarkably good. Much attention is paid to the lymphatic system of the eyes and to the principle of filtration of fluids. He indorses Leber's theory that the most important real channel for the exit of fluids from the eye is at the angle of the anterior chamber, or irido-scleral angle; and he gives much attention to the so-called canal of Schlemm. The section on the uveal tract is especially valuable.

Chapter IV is by Professor Piersol, on the microscopical anatomy of the eyeball. It occupies 165 pages, and is profusely and beautifully illustrated. It contains all the most recent results of microscopical investigation. Piersol accepts the views of Langley and Anderson as to the existence of a radially arranged contractile substance within the iris, to which the name of dilatator pupillæ muscle may be given. The most interesting section of this chapter is that devoted to the retina and the optic nerve. Cajal's experiments are given in detail, and the portion devoted to a study of the amacrine cells and ganglion cells will well repay the reading. There is a fine illustration of the retinal structure at the ora serrata.

Chapter V is devoted to the anatomy of the intracranial portion of the visual apparatus, and is by Dr. Alexander Hill, of Cambridge, England. The opening sentence of the introduction gives the keynote to the difficulty of the subject, and the broad-mindedness with which it is treated. Without doubt it is impossible to study the anatomy of the central nervous system apart from its physiology, or its physiology apart from its pathology. The cerebral connections of the retina must be treated as a problem by itself. Hill accepts the view that there are three sets of fibres in the chiasm—viz.: 1. The crossed fibres concerned with uniocular vision. 2. The crossed fibres concerned with binocular vision. 3. The uncrossed fibres concerned with binocular vision. But he does not believe it possible to distinguish these three sets of fibres in the optic nerve. He accepts as confirmatory evidence the observations of von Gudden and Gauser on degeneration following enucleation. Hill summarizes our knowledge from the evidence afforded by clinical observations and experiments as follows: "There is no doubt as to the connection with vision of the posterior part of the cerebral hemisphere, but the conflicting statements of those who have investigated the subject leave us in uncertainty both as to the topography of the visual sphere and also as to the nature of the processes carried on within it. The balance of evidence is in favor of complete limitation of vision to this sphere in monkeys and man. There is positive evidence that when the whole area has been removed vision is lost, other parts of the cortex being unable to acquire the faculty; whereas if but a small part of the visual sphere be left intact, the animal gradually learns to work so well with the part that is left that its vision becomes almost as good as before."

Chapter VI is by Mr. William Lang and Mr. E. Treacher Collins, and contains a very full account of the congenital malformations and abnormities of the human eye. The authors think that the condition of the eye known as bupthalmos, or hydrophthalmos, should be known as congenital glaucoma, as the symptoms and clinical features are all the result of increased tension in an eye with a thin and extensile cornea and sclerotic, which have not become tough and inelastic. The primary block to the circulation of fluids in the eye in primary glaucoma occurs at the circumlental space, an obstruction being thus produced to the passage of these fluids forward from the vitreous into the posterior and anterior chambers; consequently the lens and iris are pressed forward and the anterior chamber is made shallow. If the primary obstruction was situated at the angle of the anterior chamber, fluid would collect in the anterior chamber, and instead of its being made shallow it would be deepened. The authors do not believe that coloboma of the iris is due to an unclosed fœtal fissure in that structure, as the normal fœtal iris never has any cleft. Irideremia may be due to an abnormal adhesion or late separation of the lens and cornea. If this adhesion, instead of involving the whole surface of the lens, involved only a portion of its area, the iris would be prevented from developing there, but would be formed in the normal way in the rest of its circumference. In this manner a coloboma of the iris might occur in any position, and even two might be formed in the same eye.

Dr. Edward Jackson takes up the subject of the dioptrics of the eye in Chapter VII, and in the small space of 46 pages allotted to him has given a very clear, succinct account of a subject purely mathematical. It is a relief to find comparatively few formulæ and still fewer figures.

Chapter VIII is on the perception of light, by Professor Cattell, of Columbia University. Special attention is called to the sections on the perception of small distances, the comparison of magnitudes, and after-images, which are particularly clear and intelligible.

Binocular vision, conflict of the fields of vision, and apparent and natural size of objects, are the subjects treated by Dr. Brodhun, of Berlin, in Chapter IX. In it are included descriptions of Helmholtz's stereoscope and telestereoscope, Wheatstone's pseudoscope, and the binocular ophthalmoscope. There is also an excellent account of the subject of corresponding points of the retina.

Normal color perception forms the subject of Chapter X, written by Professor William Thomson and Dr. Carl Weiland. The authors give an excellent *résumé* of the various theories of color perception, including an excellent definition of color. They believe that the present modified Young-Helmholtz theory seems to give the most satisfactory explanation of all the phenomena of color perception.

Chapter XI, on the photo-chemistry of the retina, is one of the most scholarly and interesting in the whole volume. It is by Dr. Carl Mays, of Heidelberg. He first considers the retina as a whole, and subsequently its several constituent parts, devoting considerable attention to the visual purple and its photo-chemical decomposition. He calls attention to the importance of the photo-chemical process for vision and to the beneficial effect of darkness as a regenerative agent. He next takes up the subject of the mechanical alterations in the retina produced by light, and finally the electrical processes in the retina produced by light.

The work of the publishers as to paper, typography, and press work has been admirably done, and the same may be said of the work of the translators. The only adverse criticism that the reviewer feels can be made is to call attention to the extreme slowness of the publication. The ophthalmologists of the country have been kept waiting an unconscionable time for the appearance of the first volume, and if we are to wait a corresponding time for the succeeding volumes, much of what they contain will be "ancient history."

Naturwissenschaftliche Einführung in die Bakteriologie. Von Dr. Ferdinand Hueppe, Professor der Hygiene an der deutschen Universität zu Prag. Mit 28 Holzschnitten im Texte. Wiesbaden: C. W. Kreidel, 1896. Pp. viii–268.

In this volume, by one of the highest of German authorities, there can be no doubt that we have a very valuable contribution to the general literature of bacteriology. As the title indicates, the author has presented a philosophical discussion of the principles of bacteriology as now generally accepted, and has paid less attention to the subject from the point of view of natural history. The separate bacterial species are therefore described only in so far as they illustrate the principles under discussion. While the author entitles the work an "introduction," the most advanced bacteriologist will find in every chapter, especially those relating to the vital phenomena of bacteria, and to the causes of epidemics, much to engage his very earnest attention. In these chapters Hueppe especially emphasizes the principle that the capacity of bacteria to induce disease depends largely upon external conditions. This long-debated question was at one time the real point at issue between Koch on the one hand and Pasteur and Buchner on the other, the former then holding to the strictly specific action of pathogenic bacteria, until Fränkel demonstrated that this property of bacteria was one of their most valuable characteristics. Hueppe lays down the principle that infectious diseases are "a chain of processes and events the loss of a single one of which prevents the completion of the cycle." Throughout the discussion of the hygiene of infectious diseases the author constantly insists upon the importance of the physical condition of the body in determining the action of pathogenic bacteria, laying always more weight upon the conditions of growth than upon the specific character of bacteria. Buchner (*Hygienische Rundschau*, 1896, No. 13), commenting upon this tenet of Hueppe's, says: "There exists in the whole domain of the hygiene of infectious diseases no weightier truth than this." It need hardly be added that it is a truth the full force of which is not yet recognized in practical hygiene.

The treatment of the subjects of natural and artificial immunity and of serum treatment is very able and complete. The volume closes with a short history of bacteriology. Without further reference to details, it may be said that the volume shows itself throughout to be a work of the highest scholarship, and that it demands attention from all advanced students in bacteriology.

Post-mortem Examinations in Medico-legal and Ordinary Cases. With Special Chapters on the Legal Aspects of Post-mortems, and on Certificates of Death. By J. Jackson Clarke, M. B. Lond., F. R. C. S., Assistant Surgeon to the Northwest London Hospital, etc. London, New York, and Bombay: Longmans, Green, & Co., 1896. Pp. viii–78.

This little work contains, in short compass, an outline of the more important technical features of medico-legal and ordinary post-mortems. Its very limited size precludes the discussion of many details of the subjects, but in the hands of students or general practitioners it will enable them to perform successfully the ordinary post-mortem examination. Several good drawings assist in the elucidation of the text. The volume is, throughout, well compiled, but it appears uncertain that there can be any great demand for such a limited treatise upon this subject.

A Guide to the Clinical Examination of the Blood. For Diagnostic Purposes. By Richard C. Cabot, M. D. With Colored Plates and Engravings. New York: William Wood and Company, 1897. Pp. xix–3 to 405.

The greatly increased attention that has been paid during the past decade to the pathology of the blood has resulted in the publication of several works in the German language devoted exclusively to this subject, while the appearance of the first English treatise on this topic, promised some months since, has been awaited with considerable interest.

It is somewhat of a disappointment, therefore, to find that this American volume differs from its German prototypes in paying only secondary attention to the real subject of the pathology of the blood, and is addressed principally to the general practitioner who wishes to strengthen himself as a diagnostician by the aid obtainable from the examination of the blood.

In this narrower clinical field the work is undoubtedly without an equal, presenting a large mass of information about the morphological changes in the blood in a great variety of conditions. The routine examination of the blood has been very extensively practised at the Massachusetts General Hospital, and the author, with this material at his command, has been able to make valuable additions to our knowledge of the morphology of the blood in infectious diseases, especially in typhoid fever and pneumonia. The study of the leucocytosis of appendicular inflammation is one of the most valuable features of this section.

The diseases of the blood appear to have interested the author less than the subject of leucocytosis has, and, although the reported cases are numerous, the clinical features of these diseases are not presented with the same detail found in the chapters on leucocytosis, while the secondary attention paid to the pathology of these diseases, in accordance with the plan of the volume, considerably detracts from the value of this portion of the work.

The author offers the infrequency of the occurrence of malarial disease in New England in apology for an incomplete but rather succinct discussion of malaria. The statement that "all malarial organisms are found within the [red] corpuscle, and *only there*," illustrates a tendency to make inaccurate and very sweeping statements, which are unfortunately not always contradicted in the subsequent text.

The recommendations in the matter of technics are uniformly reliable, except perhaps the use of the copper plate for the fixation of dry specimens. As frequently happens with this method, the author's own specimens are apparently overheated, the hæmoglobin thus staining yellowish instead of red, an artifact which appears in the colored plates. It is doubtful if these colored plates will greatly assist the inexperienced student, on account of inaccuracies in the coloring, outlines, and finer details of the cells.

The style of diction is often excellent, but there are numerous evidences in this particular that the volume was hastily written, for which the writer was doubtless not entirely to blame; nevertheless, some of these transgressions urgently demand revision. These minor deficiencies detract but little from the main value of the book, and it may be stated that no other volume in any language so completely presents the clinical aspect of leucocytosis. The other parts being sufficiently complete for the general practitioner, we can predict for this work a large sale. On the other hand, the student who wishes to go fully into the clinical pathology of the blood must consult other works.

Functional Disorders of the Nervous System in Women. By T. J. McGillicuddy, A. M., M. D., Consulting Physician to the Italian Hospital, New York, etc. Illustrated by Forty-five Wood Engravings and Two Chromolithographic Plates. New York: William Wood & Co., 1896. Pp. vi–367.

It is rather difficult to know just what want this volume is intended to fill. As indicated in the title, it treats of the functional nervous disorders as they occur in women. But it does not treat of them in a way to be serviceable to the neurologist, and the classification is too intricate and elaborate for the book to be valued by general practitioners or gynæcologists. The author reverts to the now generally abandoned theory of "reflex neuroses," of which he describes seventeen varieties, and to each of them he devotes a chapter. These are the cerebral, spinal, cardiac, vascular, pharyngeal, laryngeal, bronchial, gastric, intestinal, renal, vesical, genital, glandular, ophthalmic, aural, lingual, articular, and dermal reflex neuroses. A classification of this character is artificial, and is entirely unsubstantiated by pathological facts. The author has probably become confused by reading the articles by Dana and Head on "referred pains," and has concluded that pain in any part which is not itself the seat of disease constitutes a neurosis of that part. The "reflex neuroses" take up the first half of the book. After them come chapters on hysteria, hystero-epilepsy (a term which should be obsolete), hemicrania, and a chapter on therapeutics.

The chapter on hysteria gives a fairly good description of this disorder as observed in France. In speaking of therapeutics, the author emphasizes the danger of nervous women being infected by tuberculosis. He says: "Tuberculosis will never affect people with good constitutions, but only those with poor, broken-down constitutions. People with good constitutions may continually inhale the bacilli without any bad effects whatever." The author recognizes the value of hygienic and dietetic measures in the treatment of the nervous disorders of women, although he also believes that frequently nervous disorders are dependent upon chronic endometritis, obstructive dysmenorrhœa, and sterility, and may require an operation.

The book is written regardless of style or logical sequence. It contains nothing new, but it retains much that is bad in old theories.

The publishers have done their part well. As a volume, the book is attractive.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Volume VII. Diseases of the Respiratory Organs and Blood, and Functional Sexual Disorders. Volume VIII. Diseases of the Digestive Organs. Volume X. Diseases of the Nervous System. New York: William Wood and Company, 1897.

The first monograph in the seventh volume is on diseases of the pleura, and is by Dr. Herbert B. Whitney. He describes the ætiology, pathology, symptoms, and treatment of the various forms of pleurisy. We think the author is correct in his doubt in regard to the efficacy of the dry-diet treatment of simple pleurisy, and his remarks on the subject of operative interference in instances of pleural effusion are commendably conservative. Pneumothorax, hæmothorax, hydrothorax, echinococcus disease of the pleura, and malignant new growths are reviewed at sufficient length.

Dr. Franz Riegel is the author of a section on asthma. The author believes in the classification of Curschmann, that asthma is primary or secondary, rather than in the elaborate classification of Brügelmann. It is reserved for later investigators to determine the nature of this disease, for the author acknowledges that today no final answer can be given in regard to that matter, while its treatment seems to be limited only by the extent of the pharmacopœia.

The section on hay fever has been written by Dr. E. Fletcher Ingals, who describes that malady in a comprehensive fashion.

Dr. E. Main is the author of the sections on diseases of the mediastinum and diseases of the diaphragm, both of which are treated with a brevity that is unusual in a French author.

The section on diseases of the blood, by Dr. Alfred Stengel, gives a very satisfactory *résumé* of the physiology and pathology of the blood and the methods of making examinations of that fluid. Hodgkin's disease, purpura hæmorrhagica, scurvy, and hæmophilia are included in the chapter.

Dr. Jules Comby is the author of the section on rhachitis, which gives a summary of our present knowledge in regard to that disease.

Dr. E. W. Cushing and Dr. Charles G. Cumston briefly review the disorders of menstruation.

The section on the functional disorders of the male sexual organs is by Dr. Charles W. Allen, who has included a great deal of nineteenth century wisdom in his terse sentences describing those maladies and their treatment.

Dr. James M. French is the author of the section on the chemical and microscopical examination of the urine, the final monograph in the seventh volume, which gives a satisfactory review of the methods employed in making such examinations.

The eighth volume is devoted to the consideration of diseases of the digestive organs. Dr. Johann Mikulicz and Dr. Werner Kümmel are the authors of the first section in the book, on diseases of the mouth. Dr. Reginald Fitz has written a very satisfactory chapter on diseases of the œsophagus. Dr. Max Einhorn is the author of the chapter on diseases of the stomach, which describes the latest methods of diagnosis and treatment in a comprehensive way. The chapter on diseases of the pancreas, by Dr. H. Leo, presents briefly and concisely the latest knowledge on the affections of that gland. Dr. B. Farquhar Curtis is the author of the chapter on diseases of the peritonæum, among which appendicular inflammation is included. Professor J. C. Huber is the author of the monograph on animal parasites and the diseases caused by them, and Dr. James M. French writes of the treatment of those diseases.

In consequence of a delay in the receipt of manuscript for volume nine, the tenth volume has been published in its place. The first section is on diseases of the brain, by Dr. Joseph Collins. He reviews the anatomy, morphology, and physiology of the brain, and describes a number of its diseases in a thorough but concise manner. It would be an advantage to the work if all its authors were as judicious in selecting material as Dr. Collins has been.

Dr. C. L. Dana is the author of the chapter on intracranial hæmorrhage, embolism, and thrombosis.

The section on tumors of the brain is by Dr. B. Sachs, who discusses the theme in his usual complete and comprehensive way.

Dr. Joseph Collins has also written the chapter on diseases of the meninges of the brain. He concludes a summary of the question of operative interference in tuberculous meningitis with the statement that "the only procedure that is justifiable at the present day is lumbar puncture, and that can not be advised with any promise of cure, but it is often of benefit in ameliorating the severity of the pressure symptoms." To this dictum we heartily agree, though there has been a decrease of the *furor secandi* for the attempted relief of cerebral lesions.

The chapters on hysteria, epilepsy, and the spasmodic neuroses are by Dr. C. Féré, who has used the material under his observation at the Bicêtre Hospital to great advantage in the treatment of the topics mentioned.

Dr. C. L. Dana succeeds in compressing into a little more than a score of pages an account of the essential features of the ætiology, symptoms, and treatment of neurasthenia.

Dr. H. T. Pershing is the author of the section on the disorders of speech, and Dr. Sanger Brown has written on the disorders of sleep.

Physiology for Beginners. By M. Foster, M. A., M. D., F. R. S., Professor of Physiology in the University of Cambridge, and Lewis E. Shore, M. A., M. D., Fellow of St. John's College, Cambridge, etc. New Edition with Additions. New York and London: Macmillan & Co., Ltd., 1897. Pp. ix–247. [Price, 75 cents.]

Of the making of elementary text-books of Physiology there is no end. Few of them are written by physiologists, and most of them are bad. Tacitly assuming physiology to be a science that deals solely with the human body, they neglect the flood of light and interest that might be thrown over it by a comparative and evolutionary treatment. They are frequently more anatomical than physiological, and sometimes more alcoholic and narcotic than either. The anatomy of the skeleton and the unattractive details of the digestive processes are made prominent, while the nervous system and the special senses are relegated to a few distant pages, and the physiology of our more obvious daily life is largely neglected. For all the reader may learn to the contrary, all possible facts are known and the science is completed and therefore dead. It is no wonder that the average youth is not attracted by the study and that the average adult does not know what a broad and active physiology really is.

When we saw the name of Foster in connection with an elementary text-book, we thought that things were now bettered, for we remembered the charm of his *Primer.* But we are disappointed. Mere "supervision" and "equal responsibility" are not sufficient to insure Foster's breadth of outlook and literary charm to a book written wholly by a junior author. One realizes that the book is accurate. The writer is senior demonstrator of physiology in the University of Cambridge and knows his facts from personal observation. Moreover, the book is full of facts new and old, well arranged and concisely put. The figures are too few, but clear. But it is the same old story of wearisome detail. The elbow joint is still a hinge joint, and the forearm in its movement still constitutes a lever of the first class. The contents of the stomach are churned about and at intervals the chyme is passed on through the pylorus into the small intestine, as it all happened twenty-five years ago. Almost as much space is devoted to the movements of the contents of the small intestine and nearly six times as much to blood pressure as to the functions of the cerebral hemispheres. Occasionally isolated new facts are added, and the youth is told, for example, that in the clotting of the blood "the fibrinogen probably takes up some of the calcium of the plasma"; but there is no mention of the existence of vasodilator nerves. There is scarcely an intimation throughout the book that the science is still in the active stage of discovery—a fact which might have been used to encourage and stimulate even the young observer. On the contrary, the didactic character of the text is not attractive.

"It is hoped" in the preface that the book "may serve as an introduction to Huxley's *Elementary Lessons,* but the language and the long, involved sentences are adapted only to adults. There is no excuse for such statements as this: "The aorta and the other arteries, the capillaries, and the veins are always full of blood, for there is never any space in them unfilled with blood."

The elementary text-book of physiology is still to be written.

Transactions of the American Orthopædic Association. Tenth Session, held in Buffalo, on May 19, 20, and 21, 1896. Volume IX.

This association in its *Transactions* for the past few years has maintained a high standard of excellence. The papers that appear in this year's publication hardly reach that standard. They show, as a rule, less originality and fewer new ideas than those of last year. It strikes one as singular that, among twenty odd papers on nearly every kind of orthopædic affection, so little attention has been given to the pathology. Not one of these papers has the pathology of any special lesion for its theme; and in the discussion of the papers the pathology is almost uniformly not mentioned.

A natural attempt has been made to define the scope of orthopædic surgery, with, we think, hardly unqualified success.

The views of Andry, the author of the term orthopædy, or even of surgeons nearer our own time, have little value in determining this question. The dividing line which shall separate orthopædics from general surgery will have been settled only when these two classes of surgeons have come to some agreement. It is just such uncertainty as exists as to what belongs to the specialty of the gynæcological surgeon and what does not. It certainly seems that fractures should belong to orthopædics; not so much because a fracture is a deformity—temporary or permanent as the case may be—but because the orthopædic surgeon with his skill in mechanical appliances is peculiarly able to treat such a condition. On the other hand, ingrown toe-nail (there is a paper on this subject in this volume), whether treated mechanically or by other methods, seems to belong to the province of general surgery.

The treatment of tuberculous bone and joint lesions is dealt with in two papers, which are valuable, not so much on account of the brilliancy of the results in the treatment as for the frankness with which failures are recorded. The iodoform-glycerin treatment, so strongly advocated by Senn and practically discarded by surgeons in the East, is here reported in a series of cases in which the injections were made into the joint itself and also into the substance of the shafts of the bones. The conclusions were—"seven cases improved as if under protective treatment alone; ten cases got worse, five having tuberculous abscesses develop and seven being submitted to operation, one of whom died; three cases were unchanged; one died of tuberculous meningitis." Eight cases are reported in which hydrochloric acid had been used in bone necrosis of tuberculous origin. The results were not brilliant. [We learn that this treatment has, since the presentation of this paper, been abandoned at the Hospital for the Ruptured and Crippled, where these observations were made.]

Bradford, in a paper On the Compression of the Front of the Feet, exposes the ignorance and disregard of anatomical principles shown in the construction of the modern shoe. This same ground, from a different point of view, was carefully gone over in two papers read before this society last year. More observations on this important subject are sure to follow at subsequent meetings, and they should interest the general practitioner not less than the specialist. Valuable work in this line has already been done by Whitman, Lovett, Bradford, and others. In a paper on The Rapid Cure of Rotary Lateral Curvature of the Spine, etc., the author, Dr. Teschner, makes extraordinary statements of cures effected in the short space of two months. The criticism that this paper evoked from the members of the association was almost unanimously unfavorable.

The Lorenz method of reduction of congenital dislocation of the hip is explained in a paper by its author. That this method will gain in favor among surgeons is not too much to expect. As yet, the number of cases in which it has been practised in this country is very small.

BOOKS, ETC., RECEIVED.

The American Yearbook of Medicine and Surgery. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-books of the leading American and Foreign Authors and Investigators. Collected and arranged with Critical Editorial Comments by J. M. Baldy, M. D., Charles H. Burnett, M. D., Archibald Church, M. D., Arthur H. Cleveland, M. D., Colman W. Cutler, M. D., J. Chalmers Da Costa, M. D., W. A. Newman Dorland, M. D., Louis A. Duhring, M. D., Virgil P. Gibney, M. D., Homer W. Gibney, M. D., Henry A. Griffin, M. D., John Guitéras, M. D., C. A. Hamann, M. D., Howard F. Hansell, M. D., Barton Cooke Hirst, M. D., E. Fletcher Ingals, M. D., W. W. Keen, M. D., Henry Leffmann, M. D., Henry G. Ohls, M. D., Hugh T. Patrick, M. D., William Pepper, M. D., Wendell Reber, M. D., David Riesman, M. D., Louis Starr, M. D., Alfred Stengel, M. D., G. N. Stewart, M. D., and Thompson S. Westcott, M. D. Under the general Editorial Charge of George M. Gould, M. D. Profusely Illustrated. Philadelphia: W. B. Saunders, 1897. Pp. 12 to 1257. [Price, $6.50.]

The Diseases of the Stomach. By Dr. C. A. Ewald, Extraordinary Professor of Medicine at the University of Berlin, etc. Translated and edited, with Numerous Additions, from the Third German Edition, by Morris Manges, A. M., M. D., Assistant Visiting Physician to Mount Sinai Hospital, etc. Second Revised Edition. New York: D. Appleton & Company, 1897. Pp. x–602. [Price, $5.]

Handbook of Massage. By Gustaf Norström, M. D., of the Faculty of Stockholm. New York, 1896. Pp. 246.

L'Ozène atrophiant. Clinique—pathogénie—sérothérapie. Par Dr. Samy Lautmann, des Facultés de Vienne et de Paris. Paris: Henri Jouve, 1897. Pp. 7 to 102.

Bibliographischer Semesterbericht der Erscheinungen auf dem Gebiete der Neurologie und Psychiatrie. Von Dr. med. et phil. G. Buschan. Zweiter Jahrgang, 1896. Erste Hälfte. Jena: Gustav Fischer, 1896. Pp. 156. [Preis, 4 Mark.]

Vorlesungen über allgemeine Pathologie. Von Dr. M. Löwit, o. ö. Professor der allgemeinen und experim. Pathologie an der k. k. Universität Innsbruck. Erstes Heft. Die Lehre vom Fieber. Mit 41 Abbildungen im Text. Jena: Gustav Fischer, 1897. [Preis, 5 Mark.]

Notes on Some of the Newer Remedies Used in Diseases of the Skin. By L. Duncan Bulkley, M. D. [Reprinted from the *Journal of the American Medical Association.*]

On the Difference between Serum and Blood Solutions, the Condition of the Test Culture, and the Significance of Bacterium Coli Infection in Relation to Typhoid Diagnosis. By Wyatt Johnston, M. D., and D. D. McTaggart, M. D., Montreal. [Reprinted from the *Montreal Medical Journal.*]

Die ballonirende Degeneration der Hautepithelien. Von Dr. P. G. Unna. [Sonder-Abdruck aus *Deutsche Medizinal-Zeitung.*]

Elacin. Von Dr. P. G. Unna. [Sonder-Abdruck aus *Deutsche Medizinal-Zeitung.*]

Miscellany.

Monsonia in the Treatment of Dysentery.—In the *Lancet* for February 6th and February 13th Mr. John Maberly gives an account of six years' experience with some varieties of monsonia as a curative agent in dysentery. This drug was used in a hundred cases, twenty-nine of which are described in detail, and the author's principal object is to show, by the results in these cases, that a drug does exist which may prove to be a more powerful remedy than any which is employed at present in the treatment of the various forms of dysentery.

He states that the drug first came under his notice in June, 1890, when a friend of his, who had been suffering for two months from a severe attack of dysentery, whose recovery was despaired of by his two medical attendants, was cured by the administration of a tincture prepared by a colonist from plants which he obtained from the Cape. The patient, aged forty-eight years, had been treated by two members of the profession in Johannesburg for the greater part of two months, and, though at times he improved, the course of the disease was from bad to worse, until at length both medical men gave him up and felt it their duty to indicate the same to the patient's family. His wife, seeing the state of her husband, decided as a last resource that she would try the effect of the drug in question, which had been given to her in the form of a spirituous extract made with French brandy by a friend who had great faith in the remedy. The result was that after the second dose of about two ounces, given at an interval of four hours, the patient went quietly to sleep, and on awaking about eight hours afterward found the dysenteric symptoms had disappeared and felt entirely a new man. He finished his medicine in two more doses, and from that time made a rapid and uninterrupted recovery, since which time he has never had any return of the old complaint, and up to 1895 he enjoyed perfect health.

After this case came under his notice Mr. Maberly obtained a preparation of the drug made with brandy from a man who, however, would not divulge the secret as to what the plant was from which the tincture was made. He used this preparation in all suitable cases with invariably good results. From June to December, 1891, he had charge of the men employed in constructing the Vaal River section of the Netherlands Railway in the Transvaal, and during that period he had about seventy cases of dysentery in which he conclusively proved to his own mind the value of the drug in question.

Although, according to some of the Indian authorities, the records of the treatment of acute dysentery with ipecacuanha show almost equally good results, monsonia, continues the author, has one great advantage in that it requires no special precautions and can be taken by the patient just like any other drug without the necessity even of remaining in bed. Secondly, chronic dysentery, on the other hand, has not up to the present time proved amenable to any form of treatment, and has been hitherto looked upon as incurable and very frequently fatal, but the preceding records go far to prove that monsonia is as efficacious in the treatment of chronic as in that of acute dysentery. Out of the hundred cases reported by him ten were chronic, and of these nine patients made complete recoveries, and were under treatment for 8.1 days on the average. In the tenth case the dysentery was cured, but the child's constitution was so exhausted by the long illness previous to treatment that it succumbed to cancrum oris. Seven of the chronic patients recorded as being cured were under observation for periods varying from one to four years, and no relapses occurred. One case was lost sight of after six months, during which time the patient had no recurrence. The remaining case was the only one, so far as the author knows, in which a relapse occurred; this was due, he thinks, to the tincture of monsonia having lost some of its qualities, the plants from which it was made having been kept too long. The patient was soon cured, however, by a fresh infusion of the drug made from plants collected on his farm.

The monsoniæ, he says, belong to the order *Geraniaceæ*, of which they form a genus. A great number of varieties are found in southern Africa. The plants he has used come under the varieties *Monsonia ovata* and *Monsonia Burkei*. Several species are known to have astringent properties due to the tannic acid which they contain, chiefly in the roots. Their action as astringents is, however, weak, and he does not think that the results obtained by the preparations he has used in dysentery were at all due to their astringent properties. This conclusion, he says, is borne out by the facts that the drug appears to have very little effect on ordinary diarrhœa and also that the preparations made from the dried flowering plant without the root were in dysentery quite as effective as those in which the root was used, in which certainly a large proportion of tannic acid was present.

Mr. Maberly states that, from the number of cases in which he has used this treatment, he feels convinced that the plant has a specific action on the poison of dysentery apart from any mere astringent properties. Whatever the active principle of the drug may be, it appears to have a soothing influence in other forms of intra-abdominal irritation on the lower nerve centres. This was shown by the distinct and rapid relief it gave in a few cases in which he tried it in pelvic pain due to old inflammatory perimetric lesions. In each of these cases the relief was much greater than that obtained by opium or its alkaloids. These facts lead him to conclude that the effect of the drug on dysenteric symptoms is partly due to its soothing action on some of the lower nerve centres and partly to the peculiar healing influence which it exerts on ulcers of the intestinal tract.

The Use of Taka-diastase in Certain Forms of Dyspepsia and Gout.—In the January number of the *Liverpool Medico-chirurgical Journal* Mr. William Armstrong states that about a year ago he was induced to give a trial to taka-diastase, which is a brown powder, free from odor, with a slight and not unpleasant taste, for which was alleged the power of converting a hundred times its weight of dry starch. This powder, says the author, was discovered by Mr. Takamine, a Japanese chemist, who, while studying in Glasgow, became greatly interested in the process of malting, which he came to consider as unduly tedious and costly.

On returning to Japan, he, with the assistance of Professor Atkinson, of Tokyo University, began a very exhaustive series of experiments, with a view to finding a class of plant capable of converting the starch in cereals into sugar, and the sugar into alcohol. He at last found what he required in the fungus of the species *Eurotium oryzæ*, belonging to the Aspergillus family. This microscopic fungus he cultivated on the flakes of hydrolized wheat bran, and succeeded in separating the diastatic and fermenting properties, so that either could be used without the other.

Mr. Armstrong has given the diastatic powder in doses of from three to five grains in a considerable number of cases, both of amylaceous dyspepsia, and of the form of gout which seems to be caused by that defect, and with excellent results. He has usually given it in powder with or immediately after meals, especially those with which much starchy food is taken; but it can also be given in mixtures, if neutral or slightly alkaline. Flatulence and acidity, he says, are greatly diminished, there is much less strain put upon the comparatively weak intestinal digestive processes, and the gouty symptoms are much relieved.

Taka-diastase has never in his experience caused the slightest discomfort, loss of appetite, or digestive disturbance; the dose is so small, and the drug itself so free from unpleasantness, that patients take it readily.

The subjects of amylaceous dyspepsia should of course, he says, masticate their food slowly and completely, and should also avoid the taking of much fluid with meals—such liquid as is necessary for the bodily processes being taken an hour before food, preferably in the form of hot water; and that required with meals being taken at the end thereof.

He is convinced that in taka-diastase we have at command a remedy of the highest value, which is capable of giving excellent results in many obstinate cases of dyspepsia, self-poisoning with amylon-ptomaines, and the resulting train of symptoms so frequently classed together under the names of latent and suppressed gout.

The Best Method of Employing Oil of Gaultheria in the Treatment of Rheumatic Affections.—In a leading article on this subject in the February number of the *Therapeutic Gazette* the writer calls attention to the value of this drug in rheumatic affections. It has been found, he says, that the large percentage of salicylate of methyl contained in it exercises a very positive influence for good in cases of rheumatism which are usually benefited by other salicylates; and, further, that its physiological action is practically identical with theirs. Further experience, however, while it has supported the view that it exercises a beneficial influence in rheumatism, shows that it disorders the digestion quite as frequently as the other salicylates, and for this reason it has not become particularly popular. There are some patients who, after taking both remedies, much prefer the salicylate of sodium or salicylic acid to the oil. It has, however, been recognized as a fact for a number of years that the volatility of the oil of gaultheria renders it easy of absorption by the skin and by the respiratory mucous membrane. Quite ten years ago, the writer goes on to say, Randolph showed that, if oil of gaultheria was placed on a sponge which in turn was placed in an inhaler, in a very short time the reaction of salicyluric acid could be obtained in the urine upon the addition of perchloride of iron, proving that the drug was rapidly absorbed from the respiratory mucous membrane and promptly eliminated. He also found that the use of oil of gaultheria in an ointment applied externally resulted in its absorption and in the appearance of a characteristic reaction in the urinary secretion.

In the *Lyon médical* for September 20, 1896, the writer continues, Lannois and Linossier, after recalling the fact that they demonstrated the absorbability of the salicylate of methyl through the skin, in the early part of this year before the Academy of Medicine in Paris, record twenty-four cases of various forms of rheumatic affections in which they treated the patients by the external application of this drug, and their results are such as to encourage them to continue this treatment, although it is noteworthy that in the majority of their cases the conditions were not such as are generally most favorable for the administration of the salicylates. Thus only four patients in the twenty-four patients suffered from acute articular rheumatism; in eleven the rheumatism was articular but subacute; in seven it was chronic and associated with deformity; and in two the rheumatism was gonorrhœal. Curiously enough, says the writer, they assert that in both these last cases this treatment did good, although it is the universal experience of the profession that, as gonorrhœal rheumatism is septic in origin, and not due to the ordinary causes of rheumatic affections, the salicylates are perfectly useless.

The method which they have followed in the application of the oil is as follows: The part which is affected is surrounded with lint which has been moistened by the application of one or two teaspoonfuls of the oil; this is then covered with a sheet of gutta-percha, and the entire limb carefully wrapped in an outside bandage, which is applied in such a way as to prevent the heat of the body from vaporizing the drug and permitting it to escape into the air, while the bandage also softens the skin and in that way aids in the absorption of the remedy. Under these circumstances these clinicians maintain that the pain is rapidly relieved, that the swelling decreases, and, as an evidence of the physiological action of the drug, that headache or fullness of the head, with throbbing of the ears and other characteristic symptoms of cinchonism, speedily appear; further, that in the course of so short a time as half an hour the salicyluric acid reaction may be obtained in the urine. In the course of eight or nine hours the greater quantity of the salicylate of methyl which has been applied to the limb is absorbed and eliminated, total elimination being accomplished in twenty-four hours and relief of the symptoms produced usually earlier than eight hours; the temperature also falls, and the general condition of the patient markedly improves.

Locally, this treatment may produce reddening of the skin, and if it is continued for some time, actual desquamation of the cuticle; but this is not painful, since anæsthesia is developed in much the same way as follows the application of guaiacol.

Sulphonal and Trional in Epilepsy.—In the October number of the *State Hospitals Bulletin* Dr. Henry P. Frost, of the Willard State Hospital, states that some of the patients have been treated with sulphonal and others with trional, also that there is reason to expect from them effects at least equal to those obtained from other sedative and hypnotic drugs. Tables are given which show the effect of these remedies upon the convulsions in a few cases in which accurate records were kept. In other cases not included in the tables there was a slight reduction in the frequency of the epileptic seizures and there was comparative freedom from irritability and excitement.

The patients invariably felt comfortable under the influence of the medicine, says Dr. Frost, and when a considerable number were under treatment at one time, assaults, altercations, and disturbances of all kinds were notably infrequent in the epileptic wards. The dose varied from five grains twice daily to ten grains three times a day, the object being to obtain no more than a fairly pronounced effect. The larger dose mentioned was needed only for a few days in any case, and after the patients were placed in this way thoroughly under the influence of the drug, the size and frequency of the dose were diminished according to individual susceptibility. In only one case was it necessary to discontinue the treatment altogether on account of unfavorable symptoms. The patient was not strong to begin with, and after a few days his heart was so seriously depressed, even by a very moderate dose of sulphonal, that it was not thought advisable to persist in its administration. Both drugs, continues the author, are well borne by the stomach and during their continuous use the appetite remains good. No marked effect upon the bodily nutrition was noticed in any of the cases. Some patients gained slightly in weight and vigor, others lost; but the change in either direction was probably independent of the medication. The urine was observed and at intervals tested for hæmatoporphyrin, but this indication of the toxic action of sulphonal did not make its appearance, owing, doubtless, to the caution exercised in its administration.

Dr. Frost thinks that these two drugs, and probably others of the same class, will prove useful in a considerable number of the epileptic cases which claim attention in the State hospitals—not as specifics or even as substitutes for the bromides in the majority of cases, but rather as adjuncts to the bromides with which they can profitably be alternated; and, in particular, as safe, effective, and pleasant sedatives for the epileptics, who, on account of their restlessness and obstreperous tendencies, stand in need of such treatment. It is possible, he thinks, that their extended use may lead to a different conclusion, but so far as his observations have gone their action has appeared to be decidedly beneficial, and a further trial seems justified.

Report of the Committee on International Quarantine adopted by the Pan-American Medical Congress, held in the City of Mexico, November 16 to 19, 1896.

City of Mexico, *November 18, 1896.*

To the President and Members of the Pan-American Medical Congress.

Sirs: The committee appointed upon international quarantine have the honor to report that in the prosecution of the work imposed upon them they have carefully examined and considered the quarantine provisions embraced in the findings of the international sanitary conventions held at Rio Janeiro in 1887 and at Lima, Peru, in 1889, and the report of the committee on sanitary regulations in the international American conference held in Washington, D. C., in 1890. They have also examined the provisions of the quarantine law passed by the Congress of the United States in 1893 and the regulations made thereunder to be observed in foreign ports with regard to vessels bound to the United States, and the regulations to be observed while at sea and upon arrival at the port of destination.

The results also of the several European conferences, so far as they relate to maritime quarantine and have a practical bearing upon the subject in relation to the western hemisphere, have been duly considered in the preparation of the regulations herein mentioned.

The conclusions of the committee with regard to maritime quarantine are as follows:

1. Each nation should enact quarantine laws and maintain quarantine stations for its own protection. In protecting itself it protects the others.

2. Quarantine operations should have their initium at the port of departure.

To this end, each nation should require of every vessel leaving a foreign port and bound to one of its own ports a bill of health signed by its own consul and certifying that all requirements or regulations necessary to insure a sanitary condition of the vessel, cargo, and passengers have been complied with.

The consular bill of health should contain all possible sanitary information regarding the port of departure and the territory connected therewith. This information should include a statement regarding the prevalence or non-prevalence of contagious diseases, the various diseases being arranged on the bill of health in tabulated form and an entry made against each.

There should be a requirement forbidding a blank report concerning any of the diseases so tabulated. The consul should be aided in furnishing the information required by a sanitary representative of the government having the port jurisdiction, as provided for hereafter.

The regulations of the Treasury Department of the United States, a copy of which is submitted herewith, are recommended as a basis for all regulations to be observed in foreign ports.

3. Each government should maintain quarantine stations in its domestic ports. Quarantine stations should be of two descriptions:

(*a*) Inspection stations.

(*b*) Refuge stations.

(*a*) *Inspection Stations.*—All ports of entry should be provided with inspection stations, where inspection of vessels from all foreign ports and inspection of vessels from infected domestic ports should be required. These inspections should be required throughout the entire year.

(*b*) *Refuge stations* are stations provided with a lazaretto for the treatment of the sick with contagious disease; a hospital for the treatment of non-contagious or doubtful cases; a detention house for the accommodation of those who have been exposed and are held under observation; and apparatus for the disinfection of the vessel, cargo, wearing apparel, and other dunnage. The quarantine regulations of the Treasury Department of the United States, to be observed at domestic ports, a copy of which is attached, are recommended as minimum requirements, special provisions to be added as may be deemed to be necessary on account of special conditions.

Refuge stations should be sufficient in number and conveniently located to accommodate without undue loss of time the vessels remanded thereto.

4. Vessels arriving at an inspection station and requiring sanitary treatment should be remanded to the nearest refuge station.

5. The treatment required of vessels arriving at domestic ports being dependent in large measure upon the sanitary information included in the bill of health, it is the duty of each government to give full and free information to the consul at the port of departure; and to this end each government should appoint a properly qualified physician whose duty it should be to furnish on request of the foreign consuls the exact information necessary to comply with the requirements of the bill of health, and also from time to time such additional sanitary information concerning the harbor, shipping, port, and surrounding territory as may be of value or interest to the sanitary authorities of other governments.

6. Each government shall obligate itself to transmit to any other government making request therefor, through the proper official channels, the name of the physician appointed or detailed for the above-named service at any port mentioned in the request, and the compensation of said physician shall be paid by his own government.

In making the foregoing recommendations the committee have had in view measures of the most practical character and have sought to avoid suggestions which might, theoretically, answer the demands of international quarantine, yet, practically, become inoperative.

To those who have had practical administrative experience it is plain that in any scheme presented liability to error and an inclination to shift responsibility must be taken into account; therefore, so far as possible, there should be no division of responsibility.

Again, quarantine is essentially a defense to be maintained by each individual nation, and no international plan is feasible which will infringe in the slightest degree upon the sovereignty of any nation. International quarantine stations, for example, to be operated jointly by the several governments, are as impracticable as would be international forts or ships of war. Therefore, in the foregoing report, the responsibility is fixed definitely upon the agent of the government to be protected, whether the measures are enforced in domestic or in foreign ports.

But there are two distinctively international agreements suggested. The first is that each government will protect itself by adequate quarantine establishments and regulations in its own ports, and by assurance of perfect sanitary condition of vessel, cargo, and passengers at the port of departure, to which its own consul should certify. It may seem strange that governments are thus importuned to protect themselves, but an examination of the quarantine practice on the American continent shows that adequate precautionary measures are not always taken, and when the intimate commercial relations between all ports are considered and the history of the infection of one port from another, this provision seems to be a necessary one.

The second international agreement suggested is one that will insure to the consuls in the several ports the accurate knowledge necessary to enable them to take the required sanitary precautions and to inscribe on the bill of health the statistical information regarding contagious diseases which is so important to the quarantine officers at the port of arrival.

The information is to be given by a duly accredited medical officer, in accordance with instructions from his government, and hence becomes official, and the medical officer is relieved of the heartless censure visited on those who give voluntary information of this character. In the plan suggested, if accurate knowledge is desired with regard to one, or several, or all ports in a given country, it is only necessary that request through the proper sanitary and diplomatic channels be made for the appointment of a medical officer in the ports named who shall furnish the required information.

Many United States consuls have reported upon the difficulty and, in some cases, the impossibility of obtaining the facts. In some instances they are only obtained by purchase, for which no fund is provided, and in others they have been obtained by unwilling and ungracious assent. This agreement, if carried out, will remove these difficulties, and the medical officers thus appointed will together constitute a corps of international health officers through whom it may be possible ultimately to establish an international sanitary union.

The object of modern scientific quarantine is twofold: First, to combat contagious disease, and second, to remove unnecessary restrictions upon commerce. The first appeals to the people at large; the second appeals to the great shipping and commercial industries. We have thus two powerful levers with which to move the apathy or indifference of nations in this regard, and both levers should be used.

Sentiment does not enter into the ordinary consideration of quarantine, yet your committee can not refrain from expressing the hope that an international sentiment will be awakened with regard to sanitation of seaport cities and their harbors, so that a perpetually infected seaport will be regarded as an unnecessary menace to other countries and an intolerable obstruction to commerce; and that, yielding to this sentiment, the various governments will remove conditions which subject them to international opprobrium, that trade may go on unfettered and friendly intercourse be maintained without danger to human life.

[Signed.]
WALTER WYMAN, M. D., *Chairman*, Washington, D. C.
H. B. HORLBECK, M. D., Charleston, S. C.
A. L. DOTY, M. D., New York.
BENJAMIN LEE, M. D., Philadelphia, Pa.

St. Mark's Hospital.—On Saturday evening, February 27th, a concert in aid of the hospital was given in the Metropolitan Opera House. The house was well filled, and it is to be inferred that the institution has derived a handsome sum from the performance.

Pancreatic Lithiasis.—At a recent meeting of the Société des sciences médicales de Lyon M. Joseph Nicolas presented some anatomical specimens obtained from a patient who had died in M. H. Mollière's service. A full account of the history of the case and of the autopsy will be found in the *Gazette hebdomadaire de médecine et de chirurgie* for February 11th. The diagnosis was pancreatic lithiasis, suppurating pancreatic angeitis, and abscess of the pancreas, which broke into the duodenum. There was acute diabetes from pancreatic sclerosis, and death was caused by caseous pneumonia.

This observation and the autopsy, says M. Nicolas, are interesting on account of the following points: 1. Pancreatic lithiasis, without being rare, is not met with very frequently, and for this reason attention should be called to all cases in order to establish its symptomatology more exactly. 2. Pancreatic angeitis, to use Arnozan's expression, may be observed in pancreatic lithiasis, just as cholangeitis is seen in biliary lithiasis, or pyelonephritis in calculus of the kidneys, its pathology depending upon the same factors as these latter affections—obstruction of the excretory canals, retention of liquids above the obstruction, and ascending infection by the glandular canals, according to Nimier. Observations of suppurating pancreatic angeitis with abscess of the pancreas of lithiatic origin are rather rare. 3. Intestinal hæmorrhages have been pointed out in the lithiasis by Elliotson and Ancelot, but in the present case the abundance of melænas was such that it was difficult to attribute to them a purely lithiatic origin. It is probable, in fact, that the hæmorrhages observed in this case were not, properly speaking, of lithiatic origin, but started from the walls of the abscess or of the fistula, the former having been coincident with the opening of the abscess in the duodenum; what renders this hypothesis very probable is the fact of the simultaneous disappearance of the pains, which were probably caused by this opening, and, on the other hand, the traces of blood which were found in the purulent sac at the autopsy. 4. Authors who have studied the symptomatology of pancreatic lithiasis group the principal symptoms of this affection as follows: *a.* Severe colic with violent epigastric pains, vomiting, and fever. *b.* Diabetes occurring some years later. *c.* A peculiar diarrhœa which presents at least several analogies to pancreatic diarrhœa. *d.* The presence of pancreatic calculi in the stools.

If the foregoing, says the author, is compared with the symptoms presented in this case, very little resemblance will be found. With the exception of the violent epigastric pains, everything was different. There was no vomiting or fever, except at the end, when the pancreas was in a complete state of suppuration; the fever, moreover, could be sufficiently explained by the presence of the tuberculous pneumonia. Steatorrhœa and diarrhœa were never present, but, on the contrary, there was obstinate constipation. Finally, if the stools had been examined for calculus, the results would certainly have been negative, as the calculi found in the canal were so thoroughly encysted that, even after Wirsung's canal was opened, they still adhered to the walls. Concerning the appearance of diabetes after an interval of several years, in this case that was far from being the case; in fact, the first symptoms of the disease appeared in the month of June, and it was not more than six months afterward that diabetes manifested itself and led to the patient's death in a few days by the rapid evolution of a tuberculous pneumonia.

This observation, says the author, aside from the interest presented by the clinical evolution and the examination of the specimens at the autopsy, explaining this evolution in all its details, may serve to show to how small an extent the symptomatology of pancreatic lithiasis has as yet been determined. Finally, it proves once more that the pathology of the pancreas is governed by the same laws as that of other glandular organs, notably in regard to the ascending infections through the excretory canals.

The Absorption of Iron in the Intestine, and its Relation to the Blood.—In the *Presse médicale* for February 10th M. Chassevant states that M. Cloetta has made some experiments in regard to the elimination of iron in the economy (*Archiv für experimentelle Pathologie und Pharmakologie*, 1897). For this purpose he used ferratin, which exercises no caustic action on the tissues. His experiments demonstrated that, in dogs which were subjected to a milk diet, the iron injected into the veins in the form of ferratin was eliminated by the large intestine. Quincke had also ascertained this by micro-chemical examination. The author also investigated the means of assimilation of this element when administered by the digestive tract, and he found that twenty per cent. of a dose of ferratin introduced into the stomach of a dog subjected to a milk diet was absorbed.

According to M. Cloetta, the organic combination of iron with albuminoid matter is necessary in order to insure its absorption. For instance, two dogs were experimented upon as follows: Their food consisted of a soup made of starch, sugar, glucose, and distilled water. To the nourishment of the first dog a solution of iron chloride representing sixty milligrammes of iron was added; to that of the second dog, a solution of ferratin representing forty milligrammes of iron. The villosities of the dog to which ferratin had been given presented the characteristic action of the iron absorbed. The iron contained in the intestine of the other dog was not absorbed and formed masses at the base of the villosities. The organic iron combined with albuminoids is evidently absorbed in the intestine, penetrates the chyle, and enters the circulation by the mesenteric veins.

Experiments made by Cloetta with newborn dogs demonstrated that the presence of iron salts in the food was not immaterial to the formation of hæmoglobin, that there was no absorption of iron salts, and that the liver seemed to regulate absorption in the same way as it did glycogenesis.

The New York Academy of Medicine.—At the last regular meeting, on Thursday evening, the 4th inst., Dr. Stephen Smith was to read a paper entitled The Health Department of Greater New York, which was to be discussed by Dr. George B. Fowler; Dr. Z. Taylor Emery, of Brooklyn; Dr. Thomas Walser, of New Brighton, N. Y.; Dr. J. Walter Wood, of Port Richmond, N. Y.; Dr. T. J. Thompson, of Clifton, N. Y., and others.

At the next meeting of the Section in General Surgery, on Monday evening, the 8th inst., the following papers will be read: Massage in the Treatment of Fractures, by Dr. George Woolsey; A Report of a Case of Strangulated Hernia in a Child of Four Months, Recovery after Operation, by Dr. Charles N. Dowd; A Report of a Case of Septicæmia with Recovery after the Use of Streptococcus Antitoxine, by Dr. Howard Lilienthal; and When shall we Operate for Cholelithiasis? by Dr. Carl Beck. Patients will be presented by Dr. Fisk, Dr. Gallant, Dr. Lilienthal, and Dr. Walker.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 9th inst., Dr. Eugene Fuller will read a paper on A New Operative Procedure for the Cure of Recto-urethral Fistula; Dr. C. W. Allen will report a case of pseudohermaphroditism; Dr. Hermann G. Klotz will exhibit specimens of sclerosis of the testis and epididymitis with hydrocele in a syphilitic; and Dr. T. H. Manley will present three cases as follows: Hypospadias, tuberculous kidney, and tuberculous testes.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 11th inst., Dr. Mary Putnam Jacobi will read a paper entitled A Case of Ataxia, which will be discussed by Dr. Joseph Collins, Dr. Græme M. Hammond, Dr. Charles L. Dana, and others. There will be a presentation of cases.

Intussusception in Children (under twelve years).—Dr. Edward Martin, of the *Therapeutic Gazette* (No. 222 South Fifteenth Street, Philadelphia), asks physicians who have had such cases to send him answers to the following questions, in order that he may determine the true rate of mortality:

"Seen by Dr.....................................
"In personal practice........In consultation........
"Age of patients......................................
"Cause of intussusception (polyp?)...................
"Symptoms—Tumor ....
"Passage of bloody mucus...................
"Tenesmus ....
"Vomiting..........Intense Pain ....
"Treatment—Medical ....Result........
"Mechanical (Injection of air..................
"water ....Massage.............)
"Result ....
"Period elapsing from first symptom to mechanical treatment...................
"Treatment—Operative (Disinvagination through abdominal opening.........................)
"Result ....
"Resection............Result ....
"Seat of invagination..........................
"Amount of bowel resected.....................
"Method of joining intestines...................
"Period elapsing from the first symptom to the time of operation....................
"Results of autopsies............................"

Further details not covered by these headings will be gladly received, such as recovery with passage of slough, etc.

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Original Communications.

SUGGESTIONS BY A GENERAL PRACTITIONER FOR THE SYMPTOMATIC TREATMENT OF SKIN DISEASES.*

By CONDICT W. CUTLER, M. S., M. D.

CIRCUMSTANCES often afford the general practitioner in medicine, especially if he has a large hospital experience, special advantages for studying certain forms of disease, in which he usually becomes interested, and eventually quite proficient in their diagnosis and treatment. As a general practitioner it has been my good fortune during the past ten or twelve years to see a great many skin diseases, and, although never intending to make a specialty of dermatology, it has interested me to study these cases more carefully than one in general practice is apt to do.

It has been my experience to see many of these diseases of the skin improve, and in many cases get entirely well, by what I might call intelligent and symptomatic treatment at the hands of physicians who were entirely ignorant as to the nature of the disease and could not tell a keratoma from a xanthoma. As physicians can not all be specialists in dermatology, and as all cases of diseases of the skin can not be referred to dermatologists for treatment, it seems especially important that the general practitioner should understand at least the symptomatic treatment of such cases as come under his care. Not that I advocate a physician attempting to treat a disease that he knows little or nothing about, for in justice to himself and to his patient such cases should be referred to one who does. In referring cases to a specialist for treatment, we can not do better than follow the noble advice given by Mr. Jonathan Hutchinson when he said: "I have always acted on the rule of conduct that I would never keep a patient in my own hands if I believed that some one else could do what was needed with greater prospects of success." But any physician who has been in the general practice of medicine for as many years as I have knows there are many cases that come under his care which can not be sent to a specialist. This is especially true with physicians who practise medicine in country districts far removed from medical centres where specialists are located. For just such cases which can not have the advantage of consultation with a dermatologist should the rational treatment by an intelligent physician be of great service, even though the diagnosis, cause, and pathology of the disease be obscure.

The object of this paper is to afford the general practitioner some help in treating symptomatically such cases of skin diseases as come under his care. In the first place it is of importance to remember that skin diseases, so far as their treatment is concerned, may be divided into three classes:

First, those having a natural tendency to pursue their course to a final termination without any treatment whatever, but which are, in fact, often made worse by applications intended for their cure.

Second, those cases having little tendency to run a favorable course, but which become chronic, extend, and reappear from time to time, yet are cured by proper treatment.

Third, and lastly, those diseases of the skin which always terminate fatally or last during the life of the patient, and are not curable, but usually relieved by treatment.

In the first class our treatment should be directed toward the comfort of the patient, and by wise counsel prevent the use of therapeutical measures which would retard rather than hasten recovery. In other classes of cases the therapeutical agents employed may be administered internally or applied externally. Almost all diseases of the skin require for their management external treatment, and, on the other hand, many of them may be materially benefited by internal medication.

A few years ago dermatologists relied very little upon internal medication for the cure of skin diseases except those purely syphilitic, but now they are depending more and more upon the proper administration of drugs to assist in the cure of their patients. They recognize more clearly each year that many skin lesions are simply external manifestations of some constitutional disorder, or are due to an organic or functional derangement of some internal organ, and that the proper treatment of these conditions results in a cure of the skin disease.

In treating a case of skin disease the general constitutional condition of the patient should be considered. If the patient is weak and anæmic, thin and debilitated, no matter what the nature of the skin lesion may be, a wholesome, plain, generous diet, with plenty of fresh air, a good bitter tonic, and cod-liver oil, will improve the condition of the skin and perhaps effect a cure. Cod-liver oil seems to be a remedy of especial value, so much so that Hebra declared it to be a remedy which could be given to advantage in nearly all diseases of the skin. If, on the contrary, the patient be full-blooded and plethoric, a restricted diet of fruit, green vegetables, bread and milk, without stimulants of any kind, even coffee and tea, and with a liberal supply of the alkaline mineral waters sufficient to keep the bowels and kidneys active, will usually be followed by an improved condition of the diseased skin, without the aid of external remedies.

Syphilis is a disease which is accountable for one tenth of all skin diseases, and as the constitutional symptoms are usually well marked, and the history of a characteristic sore following exposure is obtainable in most instances, the proper use of either mercury alone, or in combination with the iodides and a tonic, will usually result in the majority of cases in a speedy cure.

Skin diseases occurring in persons of a rheumatic or gouty tendency are often cured or relieved by putting the patient on a vegetable diet, with the administration of the alkalies and colchicum.

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* Read before the Hospital Graduates' Club, December 17, 1896.

The functional or organic derangement of some of the internal organs, especially those of the digestive or genito-urinary tract, frequently result in the appearance of skin lesions, and the proper treatment of these derangements will result in an improved condition of the skin. It is possible, therefore, to relieve many diseases of the skin by proper attention to diet and by internal medication for the cure of disordered conditions, without resorting to external applications.

If internal treatment is important for the cure of skin diseases, not less so is the proper management of the skin lesions themselves. To meet the indications for such local treatment, it is first necessary to recognize the character of the skin lesion. Not only is this necessary as a guide to the proper treatment externally, but it also serves as an indication for the internal administration of medicine.

If the cutaneous eruption is inflammatory and acute, having lasted but a few days and accompanied by general malaise, loss of appetite, and some elevation of temperature, no matter what may be the nature of the disease, a low diet, rest, and saline aperient and alkaline diuretic are indicated, and usually beneficial. If, on the contrary, the disease is chronic, has lasted a long time, the skin thickened and scaly, showing little or no signs of an acute inflammatory character, with general impairment of health, a generous, non-stimulating diet is called for, with the use of cod-liver oil, tonics, and arsenic.

There is no drug which has been so extensively employed in skin diseases as arsenic. It is the custom with almost every physician who knows little about dermatology to prescribe arsenic in nearly every skin disease he is called upon to treat, no matter what the lesion may be. Such, then, is the reputation of the drug as a specific in skin diseases, and no remedy is more abused, for its beneficial action is very limited.

In skin diseases characterized by bullæ, arsenic is indicated and may be given with excellent results; but, as a general rule, arsenic is contraindicated in all acute affections of the skin, and indicated in the chronic papulo-squamous diseases. Skin diseases in persons suffering from chronic malarial poisoning may be treated advantageously with arsenic. Nine out of every ten cases of chronic skin diseases occurring in anæmic and debilitated persons will be benefited by its use, but this is probably due to the tonic action of the drug rather than to any direct influence on the skin itself. It is usually necessary to give arsenic in large doses, and continue it for some time if good results are to be obtained.

External applications to the skin must depend very largely upon both the clinical character of the lesions and the subjective symptoms present. It is unfortunate that we have so few drugs which are specific in skin diseases—that is, having direct influence in curing the disease, as mercury has in syphilis. In other words, we must treat the majority of skin diseases with external treatment in the same way that we treat scarlet fever or pneumonia with internal medication. As we can not say that this drug or that drug will cure pneumonia, neither can we say that this or that application will cure eczema. We must treat very largely the symptoms, and by relieving the conditions present cure the disease. We may therefore divide our external remedies into groups, according to their physiological or mechanical action. Thus they may be either soothing, astringent, stimulating, protective, drying, antipruritic, antiparasitic, antiseptic, or specific.

To be in accord with the most recent progress of dermatology, one must understand some of the various methods of applying medicaments to the skin, and know what properties these medicaments or the bases with which they are combined must possess to obtain the best results. First, the drug must be either in soluble form, or so minutely divided as to pass into and through the outer layers of the skin. Second, the preparation must be protective against external influences, especially where the outer skin is broken or removed. Third, the base should be readily soluble to carry the drug with it. These general rules are not without exception, but they answer very well for the treatment of most skin diseases.

Drugs for external application may be used in the form of ointments, powders, lotions, baths, caustics, and soaps. The best success in treating skin diseases is obtained by the use of ointments. In many respects these are disagreeable and nasty means of applying treatment, soiling the patients' clothing and making them feel very uncomfortable and dirty, but nevertheless are efficacious. They are usually made by incorporating the drug or drugs to be employed in some fatty base—as vaseline, lanolin, or lard.

Benzoated lard is most frequently used for the bases of ointments, as it keeps well, is of about the right consistence, is protective, is quite readily absorbed by the skin, and is cheap.

Lanolin, a fat made from the oily matter obtained from sheep's-wool, may be more readily absorbed by the skin than is lard, but in other respects it is inferior.

Vaseline is cheaper than lard, keeps longer from spoiling if pure, but is not readily absorbed, and if not properly prepared contains impurities which are very irritating to many skins. In parasitic skin affections vaseline seems to act in itself as a parasiticide, so it is the best base for ointments in all skin diseases of this nature. Mercury and vaseline do not mix well together.

Unna has overcome some of the objectionable feature of ointment applications to a great extent by spreading the ointment on mull, so that it may be dispensed in the form of a plaster. These plasters are sold by druggist under the name of ointment mulls.

Liquor gutta-perchæ, traumaticin, and flexible collo dion are sometimes used as incipients for drugs. They are cleanly fixed dressings, which exert a certain amount of pressure on the skin that is very useful when there is chronic thickening; but in acute diseases where there is more or less exudation they can not be used. Physicians must be very careful, in making applications to the skin, never to confine sero-purulent or purulent secretions under dressings, for it always causes mischief. Deep ulcerations of the skin frequently follow applications of collodion and other impermeable substances in skin diseases accompanied with purulent exudations.

Lotions, although not as important as ointments in the treatment of skin diseases, play an important part, and should be carefully prepared so that their ingredients are thoroughly pulverized and mixed. Lotions may be applied occasionally to a diseased skin, or they may be kept continually in contact by means of a thin cloth wet in the solution, but not covered with oiled silk unless a poulticing action is required. Glycerin is usually added to a lotion as a demulcent, but some skins can not stand it, as it acts as an irritant. Lotions are more cooling and astringent than ointments, and are easier to apply to the face and scalp. The same drugs may be used in the same proportions and to relieve the same indications as when used in the form of ointments.

Powders are more frequently used in skin diseases by the laity than by dermatologists. When used they should be very fine and free from any gritty particles. Care must be taken that powders be not allowed to cake upon the skin, or to be worked into a paste, as in this condition they frequently do more harm than good. Powders are more drying than other forms of application to the skin, seem to possess a cooling influence upon an inflamed skin, and are therefore indicated in some of the acute eruptions. Among the powders used for such conditions may be mentioned buckwheat, calamine, fuller's earth, lycopodium, and magnesia. Powders may be used for their drying and astringent properties, but care must be exercised to prevent their caking and the retention of the secretions under them.

Hot and cold water baths are occasionally used as a remedy in skin affections, but their use is very limited. In chronic inflammations of the skin where there is much crusting or scaling, these crusts and scales may be removed by continual applications of hot water. Hot water by its relaxing effect on the tissues is frequently used with good effect to hasten the resolution and absorption of inflammatory thickening of the skin. In inflammations of the skin accompanied with exudation water is contraindicated. Medicated baths should be taken hot or tepid, the patient remaining in the bath from ten to thirty minutes. Among the best medicated baths are the bran, alkaline, carbolic acid, and sulphur.

Bran baths are especially serviceable in all cases requiring soothing applications to the skin, and where the subjective sensations are itching, burning, and pricking. A pound of bran may be added to a bath of fifteen gallons of tepid water. It may be simply mixed with the water, or confined in a cheese-cloth bag and soaked in it. Starch or gelatin is sometimes used in the place of bran in about half the quantity.

Alkaline baths are used for very many of the same conditions as the bran baths, but are especially serviceable in the scaly skin diseases. The water may be first made demulcent by the use of bran or starch, and then half a pound of washing soda added to the bath.

Carbolic-acid baths (from four to eight ounces of the acid to fifteen gallons of water) are especially serviceable as antipruritic remedies in the conditions of the skin already mentioned, and may be used without fear of absorption if the skin is not excoriated. This bath has undoubtedly some antiseptic qualities, and is very serviceable in the parasitic skin affections, and in the exanthemata when desquamation is progressing.

Sulphur baths are sometimes employed for the cure of parasitic skin affections, and used as a help to other treatment may be heartily recommended. Two ounces of precipitate of sulphur and one ounce of hyposulphate of sodium may be added to fifteen gallons of water. When the skin is oily and greasy these baths are especially serviceable.

Caustics are not often required in the treatment of skin diseases, except where destruction of the skin lesion is required. Those most frequently employed are arsenic, chloride of zinc, nitrate of silver, and carbolic acid. When arsenic or chloride of zinc is employed, it is best mixed with equal parts of starch or pulverized acacia, and enough water added at the time of using to make a thick paste. This is to be kept on the diseased surface for twelve hours or more, and then poultices employed until the slough separates. Nitrate of silver and carbolic acid are superficial caustics.

Soaps are of two kinds: the hard or soda soap, and the soft or potash soap. Hard soap is neutral in reaction, and is used for the purpose of ablution. Soft soap is decidedly alkaline, due to an excess of potash present, and has a much larger therapeutical action. It is usually dissolved in alcohol and used in the form of tincture of green soap. It has the physiological property of cleansing the skin, removing oil or grease from its surface, causing the superficial destruction of the horny layer of the epidermis, and acts as a direct stimulant or irritant to the skin. Its therapeutical properties are usually marked in the treatment of chronic scaly diseases of the skin. Besides these two varieties of soaps we have a large number of medicated soaps made by adding some drug to the hard soap. Most of these preparations are worthless things. The best of them are the sulphur, corrosive sublimate, tar, ichthyol, and carbolic-acid soaps. These medicated soaps should never be relied upon in the treatment of skin diseases, but may sometimes be used to aid other forms of treatment. With these several methods of applying medicines to the skin, it is then necessary to determine what are the indications and conditions present which require treatment. In the first place there are the *subjective symptoms*, which the patient is most anxious to have relieved. These symptoms are usually itching, burning, or actual pain. For the burning and itching of the skin there are several drugs, which taken internally seem to act physiologically in relieving the symptoms. They are jaborandi, salicylate of sodium, gelsemium, and antipyrine. To this list may, of course, be added morphine, but as its use simply deadens sensation of all kinds, and leads to a pernicious habit, it is not to be recommended.

For local use medication in the form of baths and lotions affords the best results, especially if the area affected is large. The hot soda and bran bath, taken at bedtime, nearly always affords relief and a good night's sleep. In cases where the integument is not denuded lotions containing carbolic acid (one part to twenty, thirty, or forty) will temporarily relieve itching more effectually than any other drug. If the itching covers a large surface the lotion may be applied occasionally, but if limited in area a cloth wet with it can be continually applied. If burning is more marked than the pruritus, diluted solutions of acetate of lead, alcohol, and carbolic acid are more beneficial. Powders containing camphor and starch, or buckwheat flour dusted over the skin, sometimes act remarkably well. The best antipruritic powder is made by rubbing together a drachm each of camphor and chloral until they are liquefied, and then adding an ounce of starch powder. Denuded surfaces of small area, which are painful or itching, are best treated by ointments or lotions containing lead and opium, or carbolic acid and cocaine kept continually applied. When the skin eruption is examined it often presents to the uneducated eye some distinctive clinical appearance which will indicate the proper plan of treatment. The appearance of the skin will frequently show if the disease is an acute or chronic one—not as to the length of time it has lasted, but as to the acuteness of the inflammatory process. In the acute skin diseases the signs of acute inflammation of the affected skin are present, as indicated by heat, redness, swelling, pain, and sometimes burning. In the chronic skin affections these signs are less marked or absent, but the diseased skin may be thickened, or atrophied, or scaly, or fissured, or tumorous, or there may be hyperplasia or ulceration of all the skin structures.

I. In all acute affections of the skin accompanied by heat, redness, swelling, pain, itching, or burning, the soothing or slightly astringent applications afford the best results. These applications may be in the form of lotions, powders, or ointments. If large areas are affected, lotions or powders are more easily applied than ointments. Frequently dusting the affected skin with buckwheat flour or cornstarch, or with powders containing camphor, oxide of zinc, calamine, or carbolated talcum, not only relieve the subjective symptoms but lessen the inflammation. Lotions containing calamine, zinc oxide, camphor, ichthyol, limewater, dilute lead water, sulphate of zinc, and carbolic acid also act in the same way, and should be applied frequently or kept constantly in contact with the skin by means of wet compresses. If the diseased area is limited, better results are obtained by the use of ointments containing starch, zinc oxide, bismuth, lead plaster, ichthyol, and camphor. Ointments made with lard or with the ointment of rose water as their base seem more agreeable and beneficial to the skin in the acute inflammatory affections than vaseline.

II. When the inflamed skin is denuded of its epithelial covering and serum is exuding, astringent and protective applications are indicated. Although powders dry up the secretions quickly and readily, they often cake, retaining decomposing secretions under them, and are irritating; therefore better results are usually obtained by lotions or ointments. If the subjective symptoms are very marked and the area of denuded surface is small, lotions containing opium or cocaine relieve these symptoms very quickly. Lotions containing ichthyol, lead subacetate, hamamelis, calamine, and zinc oxide are both soothing and astringent. Ointments, however, are usually more serviceable in treating acutely inflamed denuded surfaces, and diachylon ointment is especially so. Ointments containing hamamelis, ichthyol, boric acid, calamine, or bismuth are both astringent and protective. Lanolin or adeps lanæ are less irritating and more protective and astringent than vaseline or lard, and form the best bases for ointments to use on denuded and exuding surfaces.

III. The treatment of acute inflammation of the skin with the production of vesicles depends largely upon the size of these vesicles. If they are small and confluent, powders and astringent lotions may be applied with the hope of aiding the absorption of the exudation without producing an abraded surface. If the vesicles cover a limited area and are deep-seated, flexible collodion may be painted over the surface, the compression thus produced hastening the absorption. If pain is present, morphine may be incorporated with the collodion. Powders composed of lycopodium, salicylic acid, boric acid, stearate of zinc, talc, or magnesium carbonate, relieve the inflammation and hasten the absorption. Of these, the magnesia carbonate is the most absorbent. The best astringent lotions contain sulphate of zinc, hamamelis, and subacetate of lead, and if applied frequently to the inflamed surfaces may hasten absorption. An agreeable and satisfactory manner of treating inflammations of the skin of this character is to bathe the surface with an astringent lotion, and after it has dried dust thoroughly with powder. The drying and soothing ointments are also serviceable in this condition, especially when the inflammation is limited in extent. Diachylon ointment, Lassar's paste, and ointments containing hamamelis, boric acid, starch, oxide of zinc, and calamine are used to advantage. When the vesicles run together and rupture, the disease is to be treated as an acute inflammation with a denuded, exuding surface. When the vesicles are large and discrete, or when blebs are present, better results are obtained by opening them and carefully dissecting away the dead epithelium, bathing the denuded surface with a five- to ten-per-cent. ichthyol lotion, and applying soothing and astringent ointments, such as Lassar's paste or diachylon ointment.

IV. Acute inflammations of the skin with the production of pustules must be treated with antiseptic applications. As the pus must be discharged before the lesions heal, time is gained by rupturing the pustules as soon as they have matured, cleansing the surface with a solution of peroxide of hydrogen, and applying either an antiseptic solution or ointment. If the diseased area is not too large, ointments yield the best result. Solutions or ointments containing salicylic acid three to five per cent., boric acid two to four per cent., carbolic acid one to two per cent., or ichthyol five to ten per cent., may be applied with benefit. So long as there is any secretion of pus, an antiseptic lotion may be used to cleanse the diseased skin before the ointment is applied. When the pustules are discrete and deep-seated, good results are obtained and the inflammatory process checked by lightly touching over the secreting surface of the pustule, after it has been opened, with pure carbolic acid, or, better still, with a solution composed of equal parts of pure carbolic acid, tincture of iodine, and chloral hydrate, before applying the ointment. This application may be repeated every twenty-four hours if necessary.

V. Acute inflammations of the skin with the production of papules do not always yield readily to treatment. As these papules must be absorbed before the skin returns to its normal condition, it would seem that the drying or astringent applications were the ones indicated. Camphor, sulphur, and the sulphates seem to act very well in a large number of these cases, and lotions better than ointments. When the papules are very small and confluent the drying powders may be used—as sulphur, camphor, lycopodium, starch, and magnesia. When the papules are large and discrete, absorption may be hastened by touching them with spirits of camphor.

VI. In the exudative forms of inflammation of the skin the secretions are often found dried upon the surface. Whenever this condition exists the crusts must first be removed before treatment will have any effect. Soaking the crusts for a few hours with a bland oil—as sweet-almond oil—will soften them so that they will wash off with a little soap and water very readily. As a rule, the frequent application of water to an acutely inflamed surface, especially if the surface is denuded of its epithelium, aggravates the disease, although it may relieve the subjective symptoms for the time being.

VII. When a chronic, scaly condition of the skin exists, and exfoliation of the epidermis without an apparent inflammation or redness of the skin, the use of oily inunctions gives the best result. Salicylic acid, owing to its physiological property of softening or removing horny layers of the epidermis, is indicated. A five-per-cent. solution in castor oil may be rubbed into the affected skin every third, fourth, or fifth night, and a soda-and-bran bath taken the following morning. After the bath, sweet-almond or some other bland oil may be rubbed on the skin. Daily massage of the skin with sweet-almond oil is indicated; soap and water, having a tendency to dry the skin, should not be used frequently.

VIII. When the exfoliation occurs on an irritable, inflamed, reddened skin the continued application of bland oils is indicated; especially linseed oil is beneficial. Limewater or calamine, with olive oil, is also a very useful application.

IX. Chronic inflammation with infiltration of the skin requires the use of applications to increase the circulation and stimulate the lymphatics in aiding absorption. Stimulating lotions and ointments are indicated, especially those containing tar, green soap, carbolic acid, salicylic acid, iodine, mercurial preparations, resorcin, chrysarobin, and ichthyol. If the thickened and reddened skin is covered with scales, they must first be removed before other applications are made. This is best done by the use of hot baths or poultices, applications of bland oil, or, better, six to eight per cent. salicylic-acid oil. After the scales are softened by oil and removed by soap and water, if the disease is limited to a small area, a solution of equal parts of tincture of iodine, chloral hydrate, and carbolic acid may be painted over the surface every three or five days, and a mild tar ointment kept applied. If the diseased area is larger, tincture of green soap may be rubbed in and a stimulating ointment applied. In those chronic thickened conditions of the skin, stimulating remedies incorporated in traumaticin or collodion act well by being kept closely in contact with the diseased area, while the compression hastens absorption. An elastic bandage is also often beneficial by causing sweating and compressing the inflammatory tissues, greatly lessening the inflammation, giving support, and checking venous stasis.

X. When the skin is reddened and covered with greasy scales or crusts, ointments or lotions containing sulphur, resorcin, or ammoniated mercury should be applied or rubbed gently into the affected area. The presence of indolent papules or papulo-pustules and blackheads occurring on a greasy skin, often reddened by a venous stasis or dilated capillaries—a condition often occurring about the nose or face—the frequent use of hot water at bedtime, with the occasional use of the tincture of green soap, stimulates the skin, relieves the congestion, and results in the absorption of the lesions. The papulo-pustules should be opened and the blackheads squeezed out before the hot water is applied. Lotions containing resorcin, bichloride of mercury, or sulphur are indicated.

XI. Superficially scaly diseases of the skin having a tendency to spread from the centre toward the periphery are usually parasitic. The scales should be removed and an antiparasitic lotion or ointment applied. Lightly painting the lesion with equal parts of chloral, iodine, and carbolic acid, or a strong solution of bichloride of mercury, and applying an antiparasitic ointment, usually gives good results. If the epidermis is undermined about the edges of the lesion, it should be carefully dissected away before treatment is begun.

XII. New growths in the skin should be removed. If they are small they may be destroyed by electrolysis or removed by the dermal curette, their base cauterized with acetic, nitric, or carbolic acid, and a mild, soothing ointment applied. Larger growths should be thoroughly excised or cauterized. Destructive or ulcerating lesions should be treated on general surgical principles.

In thus suggesting what to do in skin diseases, it is also important to remember what not to do. Dr. Jackson, among his *Dermatological Don'ts*, says:

"Don't forget that many diseases of the skin are dependent upon disturbances in the general health of the patient. Don't fail to inquire into the performance of the functions of the various organs of the patient, and put him into as good a physical condition as possible. Don't tell your patient that it is dangerous to cure his skin disease rapidly, because it is not. Don't forget that most cases of pruritus are due to internal causes, and that in them external treatment is wasted. Don't forget that the bedbug and the pediculus are possible causes of this trouble. Don't give arsenic for every skin disease. Don't give it in acute eruptions, as its sphere is in the chronic scaly skin diseases. Don't forget that acute diseases need soothing remedies, and subacute and chronic diseases need stimulation. Don't order the hair to be cut from the head of a young or old woman in any disease of the scalp. Don't use a thick ointment on the hairy scalp, because it makes a disagreeable mess of the hair and will not be popular with your patient; vaseline and oils are good excipients. Don't use chrysarobin on the face or scalp, because it is apt to cause a good deal of dermatitis, and stains a deep mahogany red. Don't apply sulphur preparations after using mercury upon the face, because it will blacken the skin. Don't fail to think of the possibility of every case being either syphilis or eczema, and if you don't know how to treat the case, ask advice of some one who does."

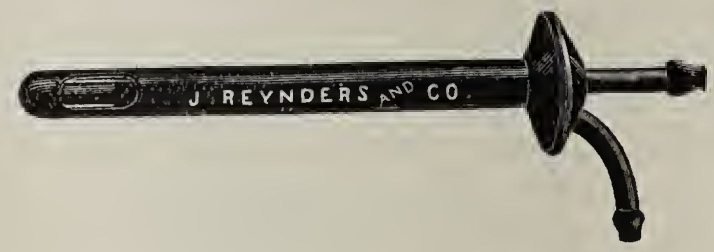
INDICATIONS FOR THE USE OF THE DOUBLE-CURRENT RECTAL IRRIGATOR.

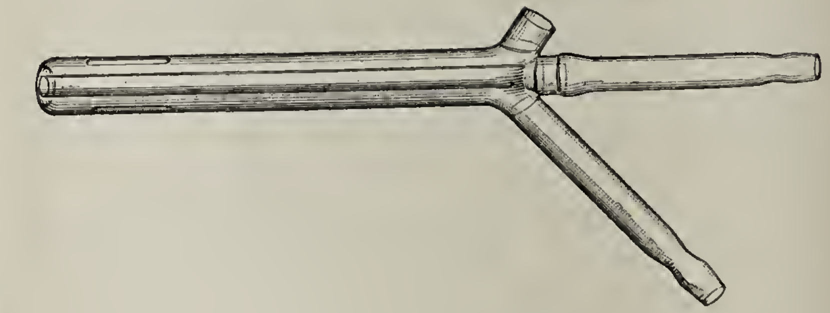
POSITION OF THE PATIENT, TEMPERATURE OF THE FLUID, SOLUTIONS EMPLOYED, ETC.

By ROBERT COLEMAN KEMP, M. D.

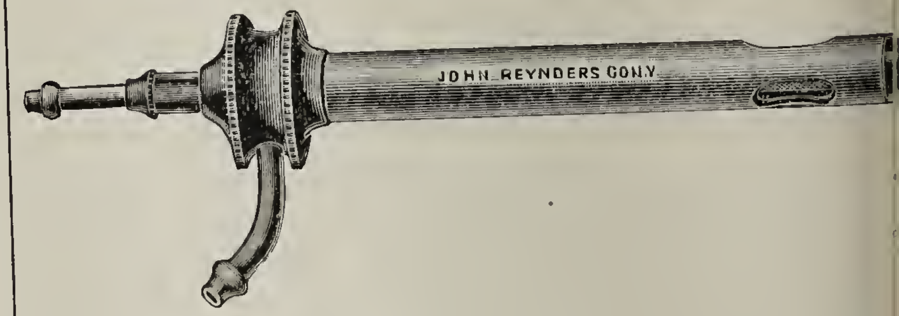
Though the rectal irrigator has been described in several of the medical journals, a cut is shown in this article for the convenience of those who have not seen the instrument. The principle of double-current irrigation is an extremely old one, and there have been many double-current irrigators described. The advantages of the present instrument are simplicity, cleanliness, and excellent results clinically. The irrigator is made on the principle of a tube within a tube—the central tube opening at the apex of the instrument, and there being two lateral openings in the outer tube. In the cut the glass irrigator, with cork opening, above the oblique tube, is shown; also the hard-rubber irrigator, the upper tube. In this the cap unscrews, and also the central tube, which is to be withdrawn when the tube is cleaned. The soft-rubber rectal tubes and also the long colon tubes are made after nearly the same model. Some of the glass tubes have no cork opening and in these the return current should always be through the centre. The third tube shown, the longest in the cut, is the model of the soft-rubber irrigator, either stiff or flexible, and also of the colon tube. For further convenience a list is appended of the different tubes.

Glass Double-current Rectal Irrigators, Five Inches Long.—No. ½; diameter, three eighths of an inch—the best size for general use. No. 1; diameter, half an inch. No. 2; diameter, five eighths of an inch.





Hard-rubber Double-current Rectal Irrigator, Five Inches Long.—No. ½; diameter, three eighths of an inch —the best size for general use. No. 1; diameter, half an inch. No. 2; diameter, five eighths of an inch. Infant size; diameter, one fourth of an inch; four inches long.



Soft-rubber Double-current Rectal Irrigators, Five Inches Long.—No. 1. Soft rubber, hard-rubber centre (stiff); diameter, five eighths of an inch. No. 2. Soft rubber, metal centre; can be curved; diameter, five eighths of an inch. No. 3. Soft-rubber, linen centre (flexible); diameter, five eighths of an inch. No. 4. Infant sizes; diameter, three eighths of an inch; four inches long; same as adult varieties.

Soft-rubber Colon Tubes (Flexible), Double Current.—Adult, soft rubber, linen centre; diameter, five eighths of an inch; length, twelve to fourteen inches. Infant, soft rubber, linen centre; diameter, three eighths of an inch; length, eight inches. Special lengths to order.

For general work, the number ½, hard rubber, adult, is the best, as it can be used safely on adults or infants.

Literature.—Old model tubes (in these the openings for entering and return currents were lateral, one large opening for each):

Medical Record, December 7, 1895. Report of Cases.

Medical Record, December 14, 1895.

Pædiatrics, January 15, 1896.

Wiener medizinische Blätter, June 4, 1896.

New model tubes:

Medical Record, October 10, 1896.

Pædiatrics, December 15, 1896.

Academy of Medicine, Genito-urinary Section, December 8, 1896. Report of cases.

THE RECTAL IRRIGATOR.

Methods of Attachment.—1. The tube of the fountain syringe is attached to the curved tube, and the current enters by the lateral opening and returns directly through the central tube. A short soft-rubber tube is attached to the central tube. By alternately pinching this and the tube of the fountain syringe the quantity of fluid entering and escaping can be regulated.

2. If the fountain syringe is attached to the central tube and the carry-off tube to the central tube, the current seems more forcible, but method 1 is as a rule the best, except with the flexible tube.

Insertion of the Instrument.—1. The tube should be well lubricated and inserted with a gentle rotary movement, not forced in; this is especially the case with the hard tubes.

2. If the flow ceases, rotate the tube slightly, or withdraw it slightly and push it back. If the return tube seems plugged, attach the fountain syringe to it for an instant, and force the current in the opposite direction.

3. Insert the rectal tube about a third to half its length in prostatic cases, etc., and full length for high irrigation.

N. B.—*Clinically,* the rectal tube, inserted full length, and the patient with hips elevated, seems to be satisfactory, even in high irrigation, as in colitis, etc., though some prefer the colon tube.

Position of Patient.—A. In low irrigation (prostatic cases, etc.): Patient sitting upright, or semi-oblique, or dorsal position, with shoulders higher than the hips.

B. In pelvic peritonitis, etc.: Position dorsal, or Sims's.

C. In high irrigation:

1. Dorsal position—hips elevated, shoulders at lower level.

2. Patient on right side—hips elevated, shoulders at lower level.

3. Patient on left side—hips elevated, shoulders at lower level.

4. Method by rotation.

a. Patient on left side, hips elevated, descending colon irrigated freely.

b. Rotate gradually to dorsal position and then to right side, hips elevated, return tube being pinched; about a pint and a half being allowed to run in.

c. Shoulders then elevated to above level of hips, patient still on right side. This is to make the fluid gravitate into the caput coli.

d. Shoulders then depressed to below hip level, patient on right side, gradually rotated to back and left side, etc. In other words, the process reversed. Return tube let go and fluid allowed to escape.

The dorsal position, hips elevated, will be found most convenient as a rule. The position on the right side is also convenient.

Temperature.—Hot irrigation, 101° to 104° F., and cold irrigation, 60° to 90° F., are the average temperatures employed. The average patient prefers heat to cold by this method, and stands it better, and at about 101° F.

The following I quote from Hare's *Text-book of Practical Therapeutics.* His chapter on enteroclysis is most instructive: "High intestinal irrigation at a high temperature for any length of time might be dangerous; . . . thus, symptoms of insolation have been reported by various observers from irrigation at 115° F. for thirty minutes." However, an exception to this has been reported. In case of shock, when the temperature is subnormal, or in any condition of the latter, high irrigation even to 120° F. has been employed until the temperature has risen to normal. Thereafter irrigation at 102° to 104° F. This high temperature was employed by me for fully twenty-five minutes, and with excellent results. The temperature of the patient should be carefully watched, and irrigation at high temperature stopped as soon as the temperature rises to normal. On the other hand, high intestinal irrigation at a low temperature might readily cause shock if prolonged for any length of time. It has been suggested that it might be employed in insolation, or where the temperature is excessively high, carefully watching the pulse and stopping it when the temperature has fallen to 102° F. With a glass Y attachment, a bag of hot water attached to one branch, and a bag of cold water to the other, the apex of the Y attached by a short soft tube to the rectal irrigator, an alternate hot and cold douche can be given. This device was suggested by Dr.

John Minor, of this city. The glass irrigator should never be used when the alternate douche is employed, the sudden change of temperature being apt to crack it. The glass irrigator is safe, when used with hot or cold water alone, if allowed to become nearly the temperature of the water before inserting. I have used it with iced water, and with hot water at 120° F. In rectal irrigation (low irrigation) very high or very low temperatures have been employed for a great period of time, even to an hour continuously, and from iced water to 120° F. Individual idiosyncrasies must be noticed. Some bear even a slight degree of cold, even though for a short time, very badly, becoming chilled and even almost going into collapse. As a rule, heat is borne much better. The nature of the case also should be considered. Some, however, do much better with cold. Every case should be tested on its merits, by the physician, before allowing the patient to irrigate himself—which can be done in many cases.

Solutions Employed.—Solution A. Flaxseed tea. Formula: Two drachms of flaxseed to a quart of water, boiled and strained. Temperature, 101° F.

Solution B. Normal salt solution. A drachm of salt to a pint of water.

Solution C. Normal salt solution with oil of peppermint, five to fifteen minims, or oil of cinnamon, five to fifteen minims to the pint.

Solution D. Plain boiled water.

Solution E. Boric acid, half a drachm to one drachm to the quart, occasionally to the pint.

Solution F. Permanganate of potassium, three grains to two quarts.

Solution G. Bichloride of mercury (1 to 10,000), two quarts.

Solutions A, B, C, and D have been used continuously for considerable periods of time, even to an hour. Solution E, two to four quarts, once or twice a day. Solution F, two quarts, once or twice a day. Solution G, two quarts, once a day for three successive days, as in croupous (membranous) colitis; thus reported with excellent results in cases following typhoid fever, etc.

Height of Douche Bag.—Generally about three feet above the patient is sufficient.

This method of double-current irrigation has been reported as being successfully employed in the following classes of cases. In all these the five-inch tube was employed.

Quantity of Fluid.—This depends entirely upon the case in which it is employed. In colitis, etc., several ounces (four to six) should be allowed to flow in before escape is permitted. If it is deemed necessary to irrigate the caput coli, the method by rotation and employing about a pint to a pint and a half at a time seems most satisfactory. In shock, uræmia, intestinal paralysis, etc., about a pint to a pint and a half should be kept continuously in the intestines. In low irrigation, as in prostatic cases, etc., two to four ounces are sufficient to be kept in the bowel continuously. This can be regulated by pinching the entering or return tube. In catarrhal appendicitis, irrigation in the dorsal position, with the hips elevated, is the safest. Later, when tenderness has disappeared, if the cause seems to be colitis, I use the method by rotation, and this also in cases when the colitis is of the ascending colon, or thought to be there; otherwise the dorsal or right-side position, in high intestinal irrigation. Dorsal position will be found most convenient as a rule.

Cases.—1. *Simple Catarrhal Colitis*: Solutions A, B, C, or E; two quarts daily if necessary at about 101° F. Solution A employed by Dr. Francis Delafield. Solution C employed by Dr. William H. Thomson. Some prefer solutions B or C, two quarts, cold, at 60° to 90° F., daily, if necessary.

2. *Catarrhal appendicitis*, in which, from the history or from examination of the stool, there are evidences of colitis; of which I have seen several cases recently. Personally I believe this to be a much more frequent cause of this class of cases than is generally supposed; and also that many of the rheumatic cases, benefited by the salicylates, salol, etc., may be due rather to a colitis, and the improvement due in part to intestinal antisepsis. In the cases noted the colon was kept empty by several daily irrigations with boric or normal salt solutions; ice bag applied, fluid diet, salol, etc. Solutions A, B, C, D, or E, two to four quarts once or twice a day, are recommended. In any case of appendicitis, keeping the large intestine empty seems to me logical. Gas or fæcal accumulation certainly cause pressure on the inflamed part. Mechanically, any pressure or pull, so to speak, on the mesentery of the appendix certainly interferes with its nutrition, poor at the best. The element of self-infection from accumulation of fæces. certainly should be considered also. In cases in which delay may be advisable, or when in a mild catarrhal attack, this method of irrigation seems to be a safe operation and logical for the above-mentioned reasons. I have been accustomed to use this method from the start, and then once or twice a day thereafter, or when tympanites seemed to call for it. The return tube allows escape of gas during irrigation; the amount of fluid injected is much less than the method by enema; most of the labor is purely mechanical, being put upon the operator, and hence less straining on the part of the patient. Solutions B or D are employed. I will cite a case that may be of interest.

G., aged twenty-four years, male. First attack, of four days' duration when I was first called in. The attending physician had just taken the case, his former physician being discharged. The latter had given morphine suppositories, a sixth of a grain every three hours; also two or three doses of castor oil. The patient presented the following conditions: Temperature, 104° F.; tympanites; bilious vomiting; pulse, 130; acute tenderness at McBurney's point; considerable tenderness over caput coli; some abdominal tenderness and evidence of enormous fæcal accumulation. The outlook was bad. I spent about an hour and a half in cleaning the bowel by gentle irrigation, and half an hour later the patient felt very comfortable, the pulse and appearance being improved. Ice bag applied. I had him carefully watched, and returned in a few hours. Temperature had fallen to 99° F. Soreness had about disappeared, except at McBurney's point. I was then able to secure a history, which happened to be of colitis. The case followed a mild course with rapid recovery. This occurred eight months ago; no recurrence as yet. He was treated for colitis by irrigation, etc., for some weeks after his recovery.

Evidently a mild case, aggravated by antiquated methods, with resulting self-infection and obstruction. Doubtless this was a catarrhal appendicitis with neglected colitis as an ætiological factor, the course it followed being due to opiates.

3. *Membranous* (*croupous*) *Colitis* (such as following typhoid fever, etc.; see *Medical Record*, December 7, 1895).—Solution G, once a day, two quarts at 101° F. for three days. Result excellent. Solutions A, B, C, D, at 101° F., can be employed once or twice a day until return is clear, or solution E or F, at 101° F., once or twice a day—two quarts.

In the case referred to, with solution G, the old model tube was used; but the new model has displaced it. Dr. Delafield employs solution G in these cases with the five-inch tube. Dr. William H. Thomson uses solution C also with the short tube.

4. *Acute Dysentery.*—Tenesmus, hæmorrhage, etc., prominent symptoms. Solution A, B, C, or D once or twice a day, at 101° F., until return is clear. Some use it also after each movement in addition. Solutions E or F, two quarts once or twice a day at 101° F., suggested, or Solution G, two quarts daily, at 101° F., in severe septic cases suggested for three days and then followed by milder solutions for several days.

In cases where there is considerable hæmorrhage several quarts of very hot solution, 110° to 120° F., have been suggested, or, on the other hand, cold at 60° F. or less, care being taken to avoid shock. Irrigation with two-per-cent. tannin solutions and with 1 to 1,000 quinine in amœbic cases, as previously reported by many observers, could also be employed.

The very simple solutions A and C have been favorably reported. Solution A by Dr. Delafield. Solution C by Dr. William H. Thomson.

5. *Chronic Dysentery.*—Solutions A, B, C, or D daily, once or twice or more, two quarts or more, temperature 101° F. Solutions E or F, two quarts once or twice a day suggested at 101° F.

Very hot or very cold irrigation, if hæmorrhage is severe, can be used as in acute cases. Solution A by Dr. Delafield. Solution C by Dr. Thomson.

6. *Intestinal Dyspepsia.*—The following has been suggested: Solution B or D, two quarts, once or twice a day, douche at 101° F., to wash out undigested products, or Solution A, C, or E, same method, if much fermentation.

7. *Chronic Constipation.*—Solution B or D. (1) Hot douche, 102° to 120° F., two to four quarts, once or twice a day, rectal or high irrigation. If above 104° F., and especially if high irrigation, use with caution (see paragraph on temperature); or (2) cold douche, same method. Temperature from 80° F. to iced water. The method is somewhat more violent. Caution should be observed (see paragraph on temperature); or (3) alternate douche, two quarts each, of hot and cold, at above temperatures once or twice a day. In this the glass Y is attached, as suggested by Dr. Minor. Injection intermittent, a few ounces at a time.

The hot douche at 102° to 104° F. is suggested to be first tried.

8. *Intestinal Paralysis.*—Solution A, B, or D, continuous irrigation at 102° to 104° F. for a considerable period; even half an hour or more.

A case reported in connection with acute urinary suppression, in which compound jalap powder, calomel, enemata, etc., had been given a fair trial. Solution B was employed, at first at 120° F., as temperature was subnormal, and as soon as it rose to normal at 104° F. The result was excellent. The temperature of the patient should be observed carefully.

Solution A would suggest itself as being excellent to promote peristalsis. About a pint of fluid should be kept continuously in the bowel.

9. *Fæcal Impaction.*—Solution B or D, at 101° F., continuous irrigation with five-inch rectal tube, especially with one of large calibre. Fæcal accumulation has been washed piecemeal from the sigmoid flexure when enemata failed to act. In a case in point there was also intestinal paralysis, and the enemata simply flowed back and out.

10. *Gastro-enteritis in Infants and Children.*—Solution B, daily once or twice until return is clean at 101° F. employed successfully.

Solution F, two quarts daily at 101° F., employed successfully.

Solutions A, C, or D, at 101° F. daily, once or more, until return is clean, are suggested.

Solution E, two quarts daily at 101° F., suggested.

In cholera morbus, cholera infantum, or in fact any diarrhœas where the lesions are in the small intestines, irrigation of the large intestine for cleanliness, and to prevent self-infection, is logical. Same solutions as in class 10, above.

Also in cholera the short tube could be employed with solution B, at 101° to 104° F., or 110° to 120° F., if collapse, with precautions stated; and also the one-per-cent. to two-per-cent. tannin solution by the same method.

11. *Typhoid Fever.*—Solution B, daily two quarts or more, at 101° F., to cleanse large intestine, relieve tympanites, and prevent self-infection. Result excellent. Used when indicated. Solution A, C, or D, suggested

in the same manner; or Solution E or F daily, two quarts, at 101° F., suggested once or twice; or Solution G, two quarts daily, at 101° F., for three days, then milder solution for three days, and so on, suggested in severe cases.

12. *Jaundice* (*Duodenal*).—Solution B or D, two to four quarts once or twice a day, at 101° F., occasionally at 104° F. Others do better at 60° to 80° F. Results excellent. Solution C or E suggested if there is much intestinal fermentation.

Most cases stand the hot irrigation best, and, given in somewhat intermittent fashion, it seems to give best results.

13. *Shock.*—Solution B or D (B is the best). In general the temperature of the saline solution should be at 101° to 104° F. and the irrigation continued for a considerable period of time. I have seen it employed with successful results for forty minutes. The advantages are that a definite temperature can be kept up and the quantity can be definitely kept track of by having a containing vessel of definite measure and measuring the return, allowance being made for absorption. About one to two pints should be kept continuously in the intestine. If the temperature is subnormal, irrigation at 110° to 120° F. can be employed until it rises to normal; thereafter, if irrigation is necessary, employ it at 101° to 104° F. The high temperature should be used with caution. This method can be employed during an operation. The short tube gives satisfaction.

In cases where a speculum is employed, as in gynæcological operations, I would suggest the short tube with metal centre. This can be curved to suit. The return is free through the small central tube, the soft tube is partially collapsed by the speculum, but considerable fluid can enter, and the speculum is not interfered with.

14. *Uræmia* (suppression of urine or insufficiency, with symptoms progressing in that direction).—Solution B or D (B is the best). Temperature of salt solution 101° to 104° F. Continuous irrigation for a considerable period, as in shock, from half an hour to even an hour. As much as fifteen to twenty gallons has been employed.

With permission, I quote Dr. William H. Thomson as having employed it successfully and also advised its use in cases of uræmic suppression, when drugs, baths, cathartics, etc., had failed, with result of the kidneys resuming their functions, also bowel and skin action. In these cases he employed the five-inch tube. Dr. Egbert Grandin also allows me to quote him as employing this method in similar cases, and states he is employing it at present about every three hours, about six gallons, on a severe case and with success. In this last case I believe he is using my twelve-inch colon tube. In the *Medical Record*, December 7, 1895, a case of uræmia is mentioned in which the short tube was employed; and in general, I believe, with the hips elevated, it is as efficacious as the longer tube. Should the patient's temperature be subnormal, irrigation at 110° to 120° F. can be employed until it rises to normal—the same precautions as in shock. It may be said that if the patient has considerable temperature with the uræmia, irrigation with hot water, even at 101° to 104° F., might cause a further rise. The result is the opposite. I have seen the bowels and skin act, the kidneys resume their function, and a considerable fall of temperature take place as the uræmic condition was relieved.

15. *Hæmorrhage* (loss of blood during operation, etc.).—Solution B, at 101° to 104° F., same method as in shock, is suggested. If the temperature is subnormal, at 110° to 120° F. until it becomes normal, with caution. Thereafter at 101° to 104° F.

Solution D can be employed, but is not so good. About a pint to a pint and a half should be kept continuously in the bowel.

This method also suggested in post-operative thirst.

16. *In Gynæcology.*—In many conditions heat or cold can be applied to the uterus and its appendages better per rectum than per vaginam, as can be seen from observation of the anatomy of the parts; also in single women the advantages are self-evident.

a. Ovarian Neuralgia: Solution B or D, daily rectal irrigation once or twice at 101° to 104° F., two to four quarts. Position dorsal and level, two thirds length of tube inserted. Vaginal douches and local applications had failed. Result excellent. A temperature even to 110° and 120° F. can be used in some cases. Every case should be treated on its merits and individual idiosyncrasy observed. A few ounces should be kept in the bowel continuously.

b. Pelvic Peritonitis: Solution A at 120° F. one hour three times a day for ten days. The uterus, ovaries, etc., were agglutinated into a large mass. Patient irrigated in Sims's position. Result excellent—a nearly complete absorption of inflammatory products. This case due to the courtesy of Dr. Egbert Grandin. About a pint to a pint and a half should be kept in the bowel continuously. In general, the temperature employed is 102° to 104° F. In many cases, as in the one cited, a temperature of 110° to 120° F. gives the best result. Position, dorsal or Sims. In every case common sense and the individual susceptibility of the patient are to be considered. Solution A is probably the best to promote absorption. Solution B or D is also employed in some cases. Rectal irrigation also suggested (1) during menstruation, when insufficient (by Dr. Grandin), (2) dysmenorrhœa, (3) menorrhagia, (4) hæmorrhage, (5) inflammatory conditions of the uterus and annexa, etc.

Thus solutions A, B, or D, according to the case. Temperature 101° to 104° F. average or hot (110° to 120° F.). Temperature 80° to 90° F. average (very cold or iced water).

17. *Rectum.*—*a.* Congestive condition of the rectum, with ulcers following operation for hæmorrhoids. (See *Medical Record*, December 7, 1895, case of Dr. Charles

T. Parker.) Cold irrigation forty-five minutes morning and night. Result excellent.

Solution B or D can be employed either cold or hot, as 60° to 80° F., or even iced water; or 102° to 120° F., morning and night, depending on the patient, and from ten to forty-five minutes; four ounces to the pint, kept in rectum continuously, depending on the case; or solution E or F, two to four quarts morning and night, hot or cold, as above, if much disinfection is necessary.

Some cases do better with hot, some with cold. Extreme degrees of either seem to be most satisfactory.

b. Proctatitis, ulcers, fissures, etc. (four ounces to half a pint, kept in bowel continuously). Solution A, B, C, or D, two to four quarts once or twice a day at 101° to 104° F., suggested. Solution E or F, two quarts daily at 101° to 104° F. Solution G suggested every few days, two quarts at 101° F. in syphilitic ulcers; milder solutions during interim.

I have recently employed solution A with success in a slight ulcer. Some cases do better with cold solutions at 60° to 90° F., or even iced water. If there is hæmorrhage from ulcers, employ extreme cold or heat, and alum solution if necessary, etc. Other solutions for above conditions will suggest themselves.

c. Internal hæmorrhoids (four ounces to half a pint, kept in bowel continuously): Solution B or D two to four quarts or more at 102° to 104° F., or even to 120° F., once or twice a day; or cold, 60° to 80° F., or even iced water.

Some do better with one, some with another. I have employed both as a temporary palliative, and with considerable relief. The flexible tube, infant size, is the least painful in these cases. Extremes of heat or cold seem the best. This same method is suggested to attempt to abort ischio-rectal abscess, irrigation of the rectum in "inoperable" cancer cases, etc.

d. Fæcal impaction: Solution B or D employed at 101° F., by continuous irrigation, until the hard mass is washed out piecemeal. A large tube should be used if possible, though a No. $\frac{1}{2}$ has been employed with success.

18. *Genito-urinary.*—In most of these cases a few ounces (from two to six), kept in the bowel continually, are sufficient.

a. Prostate: (1) Congestion, (2) acute inflammation, (3) chronic enlargement, (4) prostatorrhœa.

(1) Congestion: Solution B or D, two quarts or more, even up to thirty or forty minutes' irrigation, at temperature 60° to 80° F., or even iced water, or 104° to 120° F.

I have employed cold with excellent results; some cases do better with heat. Prolonged irrigation seems to give the best results—in some cases even to an hour.

(2) Acute inflammation: Solution B or D as above suggested, hot or cold, or solution A at 104° to 120° F., from fifteen minutes to an hour, once or twice a day, to promote absorption.

(3) Chronic enlargement: Solution B or D from fifteen minutes to an hour once or twice a day at 104° to 120° F., has relieved radically many of the symptoms, such as urinary irritability, tenesmus, etc.; or solution A by the same method and temperature has been suggested as capable of promoting absorption.

The use of small, repeated enemata is somewhat irritating to the patient at times, and the temperature can not be kept even or the act prolonged. In many chronic enlargements heat is an important factor in the treatment, and this enables us to employ it continually. It seems logically worthy of trial. The instruments for the application of dry heat are of necessity of small calibre and not far reaching.

Some cases might do better with cold, 60° to 80° F., or even iced water, or with the alternate hot and cold douche. The use of heat at 104° to 120° F. and prolonged seems, however, to be the most logical. The soft-rubber tube with metal centre can be employed if desirable to secure a curve, or the short, flexible tube. Personally, I have had the best results with heat as great as could be borne, and prolonged for thirty to forty minutes. The No. $\frac{1}{2}$ hard-rubber tube I have generally been able to use with satisfaction.

(4) Prostatorrhœa: Solution B or D, two to four quarts or more once or twice a day. 1. Hot—102° to 104° F., even to 120° F., once or twice a day for half an hour. 2. Cold—60° to 80° F., or even iced water. Short period to even half an hour once or twice a day. 3. Alternate douche (hot and cold)—once or twice a day from ten to twenty minutes with Y attachment, as suggested by Dr. Minor. The average case probably stands heat better than cold.

b. Seminal vesicles—inflammation: Solution A suggested, two to six quarts once or twice a day, or even to half an hour at 102° to 120° F., to aid absorption, or solution B or D suggested. 1. Hot—two to six quarts or more once or twice a day at 102° or 104° to 120° F. even to half an hour or more. 2. Cold—60° to 80° F., or even iced water, to half an hour, once or twice a day. 3. Alternate douche (hot and cold)—once or twice a day with Y attachment.

Heat, as a rule, is better borne. The other methods are worthy of trial.

c. Bladder: (1) Acute cystitis, (2) chronic cystitis, (3) tuberculous cystitis, (4) nocturnal irritability, (5) incontinence of urine, (6) retention of urine.

(1) Acute cystitis: Solution A, temperature 104° to 120° F., once or more a day, from five to forty-five minutes, suggested. Higher degree of heat seems the best. Solution B or D the same.

Cold irrigation has recently been reported as affording considerable relief in a case in which there was evidently tendency to abscess formation (peri-urethral) at neck of bladder. As the case became subacute it was changed to hot. This case was reported to me by Dr. William H. Thomson as seen in consultation. The temperature of the patient, 104° to 105° F., was reduced by irrigation.

Solutions B or D, cold, at 60° to 80° F., five to thirty minutes once or more daily, might be used as above mentioned in certain cases, or even iced water.

Heat, as a rule, is better borne and relieves bladder irritability.

(2) Chronic cystitis, (3) tubercular cystitis, (4) nocturnal irritability: Same irrigation, A, B, or D, hot, as above, to relieve bladder irritability. In this class I have found the best results from irrigation at a high temperature, 110° to 120° F., and prolonged to forty minutes.

Occasionally, cold irrigation, 60° to 80° F., or even iced water or the alternate douche, does better.

(5) Incontinence of urine: Solution A, temperature 104° to 120° F., once a day or oftener, five to forty minutes, suggested, or solution B or D. 1. Hot—104° to 120° F., five to forty minutes, once or more a day. 2. Cold—iced water to 80° F., fifteen to twenty minutes, once or more a day. 3. Alternate douche (hot and cold) —Y attachment, two to six quarts, once or twice a day.

The alternate douche is suggested by Dr. John Minor. Thus, he reports, in a case of locomotor ataxia the incontinence was greatly relieved, and reflexly the gait improved, by use of the alternate douche. Other regulation remedies had been employed—strychnine, spinal douche, electricity, hot rectal douche, cold rectal douche, etc.

Retention of urine: Solution B or D, irrigation at 104° to 120° F. to relax spasm and aid urination or passage of the catheter, for five to thirty minutes, has been of benefit.

Higher degrees of heat seem the best.

19. *Penis.*—Diminution or loss of erectile power. Solution B or D. 1. Hot—104° to 120° F., five to thirty minutes, once or twice a day. 2. Cold—iced water to 80° F., the same. 3. Alternate hot and cold douche, two to six quarts each, once or twice a day.

The alternate douche especially has been of benefit.

20. *Nervous Conditions.*—(1) Some cases of melancholia, etc., are judged to be due in part to absorption of poisons from undigested food, etc. Solution B or D, daily irrigation at 101° F., once or twice. Two quarts or more to prevent self-infection. Solution C or E, the same, if there is much fermentation. Two quarts once or twice a day.

(2) The possibility of influencing the circulation, secretions, and nervous system through the abdominal plexuses. Solution B or D. 1. Hot douche—101° to 120° F. 2. Cold douche—90° to iced water. 3. Alternate douches (hot and cold) are worthy of experiment. (See effect on gait in case of locomotor ataxia, mentioned under incontinence.)

When the rectum is irritable I generally inject half an ounce of salt solution, and in it an eighth to a quarter of a grain of cocaine, before inserting the rectal tube.

Solution B is physiologically superior to solution D.

As regards the principle of double-current irrigation, I am well aware that it is extremely old. The double-current rectal irrigators of Bodenhamer, Skene, and others are well known, and also the various methods of irrigation by two tubes, etc. I am also aware that this principle has been employed in most of the classes of cases here cited by different observers. In these cases for the most part the short tube was used. In my remarks under the head of catarrhal appendicitis I merely wish to emphasize the importance of keeping the colon empty, avoiding pressure, etc., on the inflamed area. No remarks are intended on the ætiology of appendicitis, but attention is called to the possibly more frequent occurrence of colitis as a primary cause. I have no desire to enter into the well-worn appendicitis controversy. In many of the cases cited irrigation is only a palliative or an adjunct to the other methods. Like any other therapeutic agent, it will be a success in some cases, a failure in others. My only plea is that it should be given a fair trial, not in one case, but in many. Being given such, I believe it will often be found of value. I know of one medical gentleman who recently tried the soft tube with a metal centre. He bent it at an acute angle—result, no flow—and pronounced the tube a failure. Comment is unnecessary. The advantages alleged for the tube are simplicity and cleanliness. Personally, I believe the five-inch tube will do the work required. I know that Dr. William H. Thomson, of this city, employs it in catarrhal colitis, dysentery, and uræmic conditions with excellent clinical results. As reported in the *Medical Record*, December 7, 1895, the short tube, old model, was employed in a case of membranous (croupous) colitis at Roosevelt Hospital, in the service of Dr. Francis Delafield, with success, and I know that he now employs the short tube. In the paragraph on Position of the Patient, mention is made of a "method by rotation." The original experiment was as follows: The bowels were emptied, patient irrigated on left side, hips elevated, descending colon washed out, gas allowed to escape. The return tube was then pinched and a measured pint allowed to run in; the patient then gradually rotated to right side, hips elevated, a second pint flowing in, and then the patient raised to the sitting posture. The return tube was then released; one pint escaped, the second pint was retained. The patient had a feeling of fullness in the caput coli; also there were physical signs here on percussion which did not previously exist. The tube was removed, and some time after there were several copious movements. On the following day the same experiment was performed, but carried on further. The pint was retained as before; physical signs as before. The process was then reversed; the retained pint escaped and the physical signs disappeared. From this experiment I deduced the "method of rotation" and have employed it with success. It is simply mechanical. Experiments on the cadaver show that on irrigation with the short tube the caput coli when tapped gives the same colored fluid (dyed with fuchsine). Personally, I care little for this experiment, as the muscular intestinal tone is entirely lost. I believe by the double-current method, by position and irrigating gently, fairly small amounts of fluid will do the cleansing required, much as on the principle of washing the stomach or bladder. I do not believe in great distention of the gut under any circumstances. The caput coli and colon are a "sink for refuse," so to speak, and in diarrhœas of the small intestine there would certainly be a tendency for accumulations below and more or less septic absorption. The good results obtained by intestinal irrigation seem to be the clearing out of such products. I question if sufficient fluid ever passes the ileo-cæcal valve to be of practical benefit above that point. Some, however, say so. I can here hardly pay too high a tribute to those who have investigated the matter of self-infection, Roswell Park and many others, or to our "children specialists," who have so ably demonstrated the value of irrigation. The medical profession at large can learn much by following their lead. To the gynæcologists also we are much indebted. They have certainly demonstrated that careful attention to the intestinal tract, the rapid opening of the bowels, etc., will cause rapid disappearance of septic symptoms. I believe that cleanliness of the large intestine may often prevent or mitigate many complications. By this I do not mean that the rest of the intestinal tract should be neglected. The close relation of the large plexuses to the intestines, and the influence on the system through them, are also worthy of note.

These tubes can be obtained from the Reynder Instrument Company, Twenty-third Street and Fourth Avenue, or from M. J. Breitenbach, No. 591 Madison Avenue, corner of Fifty-seventh Street.

449 Park Avenue.

MODERN METHOD OF TREATMENT OF DISEASES OF THE INTESTINES.*

By FENTON B. TURCK, M. D.,

CHICAGO.

Most intestinal diseases present the same pathological conditions as are found in diseases of the stomach. The same ætiological factors that induce gastritis may continue down the alimentary tube, causing an irritation resulting in enteritis. The ætiological factors of enteritis comprise a long list, among which are found diseases of other organs, acute diseases, errors of diet, fevers, and nervous diseases of central and peripheral origin. Under certain conditions in which the functions of the intestines and colon are disturbed, micro-organisms develop upon the walls of the intestinal tube. Toxines are formed by the development of these micro-organisms in the rich soil adhering to the mucous membrane and affect the cells beneath, causing a disturbance of the glandular functions, with marked circulatory changes and derangement of the muscular mechanism. The ordinary treatment in vogue is the attempt at antisepsis, which frequently fails, as an infected tube twenty feet long, like the intestines, can not be sterilized by a few grains of any antiseptic. Most antiseptics are systemic poisons, and increased doses sufficient to produce antisepsis are contraindicated. The study of infection of the intestines shows two conditions: First, the food may become a medium for growing micro-organisms, the toxines of which, by absorption, produce a systemic poisoning. The various symptoms produced by these toxines depend upon the group of micro-organisms and the media in which they develop. Second, the mucous membrane of the intestines becomes coated with thick mucus, similar to that which I have found adherent to the mucous membrane of the stomach in cases of gastritis. This mucous coating contains gland cells, leucocytes, and remnants of food.

The protoplasm of the exfoliated cells and the partly digested food furnishes a rich soil for the rapid development of micro-organisms. I have secured some of this adherent material and sections of the mucous membrane in intestinal operations, and with these have carried out similar experiments as I did in my studies of the bacteriology and pathology of the stomach. From these, as well as from experiments upon animals, I have found that chronic inflammation of the intestines progresses in the same manner and presents the same conditions as those observed in chronic inflammation of the stomach. The indications for treatment are to remove the media in which the micro-organisms develop and thus deprive the pathogenic germs of the material in which they produce their toxines, and not simply to disinfect the food that passes down the tube. The first indication in the treatment of intestinal diseases is to begin at the upper end —the stomach. As errors of diet are the most important factors in the ætiology of gastro-intestinal diseases, the most rational therapeutics would be the correction of these errors.

It is not within the scope of this paper to enumerate the errors of diet and the correction of the same. If fermentation and putrefaction arise in the intestines, they are due only to two factors: First, the presence of a soil for the development of micro-organisms. Second, the micro-organisms. In four to twenty-four hours after the birth of an infant its entire alimentary tract is swarming with bacteria, such as the *Bacillus coli communis*, *Bacillus pyocyaneus*, streptococci, staphylococci, and saprophytic germs. Germs are found in every intestinal tract. All that is necessary for infection is that the conditions be made favorable for their rapid development and the proper medium best suited for the production of toxines.

Micro-organisms form different productions, according to the media in which they develop. For instance, in the study of micro-organisms of the stomach many lactic-acid-forming germs, when grown in pure starch solution, are not toxic; but as soon as bouillon or nutrient gelatin is added and the material put back into the incubator, the culture introduced into the stomach of a rabbit produces severe gastro-enteritis with symptoms of diarrhœa. The study of the different soils of media is as important as the study of the micro-organisms. If a bottle-fed child, or a child nursed at the breast, is given food at improper intervals, or too large a quantity is given at one time, this is often quite sufficient to set up a gastro-intestinal irritation, and a medium is rendered fertile for the development of the ever-present micro-organism, with the resulting production of toxines. Treatment by attempting to kill the microbes with antiseptics is irrational and ineffective. We can not kill germs in test-tube cultures where the soil is rich, except with an antiseptic which, if prescribed, would be powerful enough to cause death. The use of antiseptics with a view of antisepsis of the intestines is wholly theoretical. If all food is withdrawn for twenty-four hours and then starch is fed exclusively to the infant, the toxines are not so readily formed, not because the colon bacillus, the *Bacillus pyocyaneus*, or any other germ is destroyed, but because there is a change of the medium, and with it the products of growth are altered, as well as the growth itself. I have demonstrated these facts experimentally as well as by clinical observation.

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Christopher, who has had a large and extended clinical experience in the treatment of diseases of children, strongly advocates the change from milk diet to that of starch in certain classes of infectious diseases of the intestines. He reports excellent results by this treatment.

After the correction of the errors of diet the intestines must be rendered aseptic to a certain extent by the removal of the culture media and by the restoration of the secretory and muscular functions. The indications are: (1) to lessen or remove the ætiological factors; (2) to remove the adherent material from the walls of the intestines and render the tube as aseptic as possible; (3) to restore the muscular functions; (4) to reduce the congestion of the viscera.

Correction of Errors of Diet.—It is impossible to formulate rules of diet that will be applicable to all cases. Prescribe no food that undergoes fermentation or putrefaction. The use of chopped meat in the beginning of the treatment, with diabetic flour and bran, has met with the most brilliant success. The methods of preparing the chopped meat must be varied, as the patient soon tires of so simple a diet. It may be made into patties one by three inches, broiled, frequently turned. Scotch collops are made by covering the meat with water and allowing it to stand for a few hours on the stove (at a temperature below the boiling point, so as not to coagulate the albumin). It makes a semisolid mass, and is served in little china dishes (cachets). A lump of fresh butter and, when not contraindicated, salt and pepper are used. Raw meat (*rohes gehacktes Fleisch*) is also much used. Patients soon learn to relish it. Raw-meat sandwiches are recommended by Thompson (quoted from *Food*). Three ounces of raw beef or mutton, one ounce of very fine bread crumbs, and one teaspoonful of sugar are used. Cut the meat very fine; rub it through a hair sieve. Then pound it in the mortar to a paste; mix it with bread crumbs and sugar and a little salt and pepper; spread it between the slices of either brown or white bread. The variations in the preparation of this very simple *menu* rest chiefly in the judgment and skill of the attending physician. My custom is to vary the preparation of the food with every meal. In a large number of cases I find that patients do better on two meals a day. The increase in diet must, of course, be regulated by the physician.

Use of Bran.—The use of bran in gastro-intestinal diseases, while not entirely new, is not appreciated by the general profession as it should be. I have demonstrated and advocated its value for some time, as will be seen by reference to my literature.

Preparation of Bran.—Procure coarse bran taken from the feed store. Heat it in the oven at 150° C. in order, first, to sterilize and, second, to transform the starch granules present into dextrin. I use bran gems by mixing the bran with water, adding a small amount of Graham flour to make it adherent, then a little salt, and baking in iron gem forms, the same as are used in baking Graham gems. Serve at once with pure fresh butter. Most of my patients relish the gems as prepared, and I have seldom any difficulty with their continued use. Another method is to combine bran with flour, usually using gluten flour, making bread the same as ordinary bread, seventy-five parts flour with twenty-five parts bran. Bran gems should be eaten in the morning, and sometimes are useful two or three times a day.

Action of Bran.—The bran particles being insoluble and indigestible, assist in grinding the food. I have demonstrated this experimentally in stomachs artificially improvised out of rubber bags. These bags are kept in constant motion, immersed in water at the temperature of the body. In bag No. 1 was placed chopped meat with the gastric ferments, to which bran was added. In bag No. 2 was placed chopped meat with the ferments, without bran. I found that the solution of meat in digestion was much accelerated in bag No. 1. The particles of meat with the bran were divided more readily and the solution gave a biuret reaction in a shorter space of time. The bran particles mixed with the food, passing between the food particles, allow the gastro-intestinal fluid to come in closer contact with the food to be digested. The sharp edges of the bran, as it makes the excursion through the gastro-intestinal tract, have a marked mechanical effect. First, it helps to remove the adherent mucus, with the other material mentioned, from the walls of the tube. In examining fæcal matter after a liberal diet of bran, thick, gluelike mucus will often be found with gland cells from the walls. The mechanical action of the bran is similar to that of sand or shot with water used in cleaning bottles. In this way the bran acts as an aseptic agent, assisting in the removal of the nutrient media from the intestinal wall in which bacteria flourish. It is in this medium that I have demonstrated that groups of micro-organisms develop, whereby toxines are formed which are partly taken up by the underlying gland cells.

Besides assisting in the removal of the medium, bran particles have a stimulating effect upon the blood-vessels and gland cells, producing also a muscular stimulation (peristaltic action). This stimulation prevents or retards the development of micro-organisms so that they do not colonize luxuriantly upon the walls, although present in the lumen. Even on reaching the colon the stimulation continues, hastening the fæcal matter onward. It simulates secretory and peristaltic action until the contents reach the lower part of the colon, producing a soft stool. So marked is its effect that in some cases it causes overstimulation and a slight diarrhœa. It is then discontinued for a few days, when its use is again resumed.

From the outlines already given, it will be seen that many cases of intestinal diseases originate from gastric disorders. The bran in the stomach aids the churning process whereby the food is ground up into a pulp and, aided by chemical means, prepared for intestinal digestion and absorption. In the gizzards of birds small pebbles perform the same office in preparing the food. In many cases not only is the stomach lacking in motor power, but the intestines likewise become involved. A lack of motility may occur from simple muscular weakness. The bran, while hastening the digestion and absorption, is not digested and absorbed itself. Therefore it furnishes the necessary bulk to assist in carrying off the food and any other material that is not utilized in the process of digestion. The presence of bran is not harmful, as it does not furnish a medium for the development of micro-organisms. The fæcal matter is often retarded along the transverse colon, which is frequently dilated and prolapsed. The bran acts here also as a muscular stimulant, increasing the secretion and facilitating the passage of fæcal matter through even a dilated colon.

In all conditions where the gastro-intestinal tract shows evidence of infection, especially in subacute and chronic inflammation, it offers one of the best agents at our command for producing a relative aseptic condition of the alimentary tract. It will be noticed that in many cases where putrefactive conditions are present (often indicated by offensive stools) the use of the bran treatment results in a marked improvement in the character of the stools.

In the treatment of infants, where the infection of the alimentary tract is present with undigested milk food and offensive stools, I have been able to produce a marked improvement, noticeable in a short time, by the use of the bran treatment. The bran mixing with the milk produces a flocculent mass instead of caseous lumps, which latter are powerful gastric irritants; moreover, as they are large and insoluble, the ferments are incapable of dissolving and digesting them.

The bran also removes the adherent material from the mucous walls of the tube, renders it aseptic in the same manner as above described, and stimulates the secretory functions as well as the peristaltic movements. The offensive odor of the stools disappears in from twenty-four to thirty-six hours.

Methods of Administering Bran to Infants.—For an infant five to ten months old a half teaspoonful to one teaspoonful of very finely sifted, sterilized bran is mixed with four or five ounces of milk and injected into the stomach once or twice daily. The amount of the bran may be increased with the age of the infant.

Method of Injection.—A small catheter, No. 11 or No. 12, with the opening at the extreme end, is attached to a syringe filled with a mixture of the milk and bran in the proportion stated. The tube is then passed rapidly into the stomach. It is not a difficult matter to feed infants in this way; it is easier to pass the tube in infants than in adults.

When the passage of the tube is impracticable the mixture may be fed with a nipple having a large opening. The nurse holds the bottle in a high position and shakes it to prevent the settling of the bran particles into a mass. Or the infant may be fed by a spoon. Neither of the last-described methods is as practicable as the feeding through the tube and syringe, as the particles of bran often irritate the larynx.

The injection of the bran can be accomplished at the same time that the stomach is washed out, which is often necessary in the treatment of such cases.

Use of Cloves and Cinnamon.—To further assist in rendering the tube aseptic I have used a coated pill of oil of cloves and cinnamon. This pill is coated with shellac and betol to prevent the contents being set free in the stomach, so that only the intestines will be affected. I have before mentioned (*Journal of the American Medical Association*, June 22, 1895) that a pill coated with shellac and betol would not be soluble in the stomach, but freely soluble in the intestines. Shellac and betol seem to form a useful coating for pills for intestinal medication. When the pills reached the intestines the secretions would cause a solution of the betol, which would unlock the cement coating and thus set free the contents. In experiments on dogs I found this to be the case. But when it was given to patients the pill was sometimes set free in the stomach, especially where that organ was much dilated and its motion retarded. In other cases the pill has been found in the fæces, having passed through without a solution of the coating. This was partly due to a faulty method of making the pills. Recent improvements which I have made have met with more encouraging results. As with all methods of medication, there are certain limitations to its usefulness. The pill consists of hard soap, three grains; oil of cloves and cinnamon, one drop each, made into a pill mass and placed in gelatin capsules. These capsules are thinly coated with plaster of Paris. After being hardened it is dipped into a mixture of shellac dissolved in alcohol mixed with betol. About four coats will suffice. One pill may be given every hour or every two hours, according to circumstances. These pills are made by R. E. Rhode, chemist, Chicago. The value of the use of oil of cloves and cinnamon I have described in previous contributions, and given the results of experiments and enumerated the clinical advantages.

Treatment of Sigmoid and Colon by Direct Methods.—In the treatment of the colon more direct methods may be employed. The most common pathological condition found is chronic colitis simplex, chronic membranous colitis associated with symptoms of diarrhœa and constipation. The colon may become dilated, most generally the transverse colon. With prolapse the sigmoid is frequently found dilated with elongated mesocolon. In the treatment of the stomach and colon it will be found that the intestines are also affected, especially by some of the following methods: First, by the introduction of ice water with massage of the colon; second, by the method of irrigation by the use of the needle douche, with alternating hot and cold water; third, by the use of the hot-water bag with double tube within the stomach or colon; fourth, by application of oil of cloves and cinnamon through a double tube with a nebulizer; fifth, by the use of the gyromele.

Ice water is introduced into the colon through a single tube. The patient is placed with the hips elevated, so that the water will run up the colon. Then it is massaged downward until it reaches the cæcum. The water in the colon can be traced, first, by percussion; second, by succussion; third, by Benedict's method of auscultatory percussion. When the water has reached the cæcum the hips are lowered and the cold water is massaged out of the colon through the rectal tube and runs into a receptacle placed beneath the operating table. The amount of water introduced each time is from four hundred to six hundred cubic centimetres. This alternating injection and expulsion is continued until three or four litres have been used. The introduction of ice water directly into the colon stimulates the congested vessels in a marked degree. No chilling or depressing effects are produced, as when ice water is applied externally. On the contrary, the effect is stimulating. Not only is a stimulating effect produced on the circulation, but the peristaltic action is increased. Another valuable factor is that it does not remove the secretions of the colon to the same extent as warm water. Secretions are essential for lubricating and facilitating the passage of fæcal matter through the colon. Warm water is a vaso-dilator, and, when rectal injections are taken in the usual manner, harm results, producing weakness and inducing the injection habit, and also increasing the symptoms of constipation. In the ice-water treatment with massage, pressure should be exerted on the abdomen with the patient's knees flexed. In this way the colon can be reached by massage. It is necessary to use both hands, the left hand being placed over the right, and pressure should be gradually exerted until it is made directly on the colon and its contents. In this way the water can be moved about in the colon at will, and it is the only way in which colonic massage is made effective. Rubbing the abdominal wall in the usual manner is not colonic massage.

The Use of the Double-Tube Needle Douche for the Sigmoid.—The stomach needle douche, which was presented by me at the American Medical Association, May, 1895, I have used for a long time in the treatment of the colon. It consists of two single tubes of different calibre arranged side by side, the large tube projecting beyond the smaller tube. At the end of the smaller tube is attached a small perforated bulb for producing a shower. The smaller tube is also made with perforations along its side and over the blind extremity. The water is forced into the smaller tube under pressure by the compressed-air irrigator. The effect is to produce a fine shower or needle douche, hence its name.

The effect of the fine shower, as it is projected against the wall of the rectum and sigmoid, is that of a vasomotor and muscular stimulant, being similar to that produced by a rain douche on the surface of the body, only in a greater degree. In cases where the sigmoid and lower colon become markedly dilated and atony is present, with congestion of vessels (which can be diagnosticated by direct observation), the use of alternating hot and cold water by the "needle douche" is of great value.

I first called attention to this apparatus at the American Medical Association, May, 1895, and also before the New York Academy of Medicine. The first paper was published in the *Journal of the American Medical Association*, May, 1895, and the second in the *American Medico-surgical Bulletin*, July 1, 1895. The pressure is produced by the force pump compressing the air in the irrigator and forcing the water through the tube.

For general purposes I have not found it necessary to use a force pump to compress the air, and have simply used a small rubber bulb similar to that used with an atomizer. When hot and cold water are used alternately two irrigators are necessary. The irrigators are made in the usual way. A bottle, through the cork of which a glass tube passes, is connected with a rubber bulb. By compression of the rubber bulb the air is compressed over the water on the bottle. This compression forces the water out of the bottle into the irrigating tube. Thus a forced shower is produced under pressure, by compressing a single bulb, same as I have before illustrated with the force pump. By using a glass Y-tube, connected with a single bulb attached to the stem of the Y, the ends of the glass tube being attached to the rubber tube, which again leads to each bottle—namely, the hot and cold water—the air is compressed in both bottles. The outflow tubes from the irrigators are connected with another glass Y-tube, the stem of the Y-tube being connected with a single rubber tube. Hot and cold water can be used alternately by having a simple cut-off-snap on the tube leading from each bottle. This simple device is within the reach of all. A mechanical stimulation is produced by the impact of the small needlelike streams emanating from the perforated tube, and the circulation of the whole pelvic viscera is affected and the tone increased.

The treatment of the intestines by hydrotherapeutic measures is well recognized. The introduction of water directly into the colon or stomach has for its objects cleansing and stimulation of the viscera. Repeated irrigation of either stomach or colon is often detrimental, in that it washes out the necessary secretions and other material; and the use of hot water of high temperature directly into the colon is contraindicated, as it becomes a powerful irritant. If the temperature is not sufficiently high the water acts as a vaso-dilator and rather increases than reduces the congestion. To overcome these obstacles I have devised a rubber bag (see *Journal of the American Medical Association*, January 11, 1896) with a double-tube attachment which is introduced into the colon or stomach, or both. One side of the double tube is connected with a hot-water irrigator at a temperature ranging from 120° to 130° F. Water is passed into the rubber bag and out through the other tube into a graduated bottle. The amount and temperature of the water passing into the bag may be regulated at will. The bag, when collapsed, fits around the tube and does not materially enlarge it. Its distention is limited for use in the colon to about three to three inches and a half in diameter. If the water is passed through the bag in the room it is not so promptly reduced in temperature as when passing in and out of the bag in the viscera. Even when the bag is placed in cold water the temperature is not reduced so rapidly as when it is in the stomach or colon; but after a certain time has elapsed, about ten minutes, the viscus does not so readily reduce the temperature. W. Gilman Thompson has made some interesting experiments on dogs by introducing hot air through the trachea and other parts of the body, observing the great reduction in the temperature of the air during its passage. The temperature-regulating mechanism is very active internally as well as externally. This must be recognized in my direct internal methods of treatment—namely, the use of a constant flow of water at high temperatures through a rubber bag in direct contact with the viscera. The action of this high temperature directly upon the vessels within the viscera is prompt, resulting in marked vasomotor stimulation.

The effect upon the entoderm or inner cylinder of the body is more decided by direct methods of treatment. Students of embryology, as well as the clinician, will recognize this. The surface of the body under treatment by this method shows a glow; a sensation of warmth follows as the circulation becomes equalized in the reduction of the visceral congestion, and the hands and feet become warm. The good effects are lasting. Not only have I found it of use in intestinal diseases, but also in cases of shock marked by internal congestion. I have introduced this method during operation where shock is imminent. In use in the colon the pelvic viscera are affected, and its value in dysmenorrhœa due to congestion or anæmia is apparent. The time of each treatment is twenty minutes to half an hour. It is then siphoned or aspirated from the bag and the latter withdrawn.

(To be concluded.)

A PORTABLE VACUUM CHAMBER FOR HOUSE DISINFECTION BY FORMALDEHYDE.

By WYATT JOHNSTON, M. D.,
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BACTERIOLOGIST TO THE BOARD OF HEALTH OF THE PROVINCE OF QUEBEC.

I wish to record an experiment in the construction of a vacuum disinfecting chamber recently authorized by the Board of Health of the Province of Quebec. It was designed to be sufficiently light and compact to be carried on a stretcher up-stairs and through ordinary doors by a couple of men, and at the same time large enough to contain at one charge as many infected articles, difficult to penetrate, as are likely to be met with in routine disinfection of an ordinary sick room. The object was to secure complete disinfection without the removal of the effects, and also to economize the formaldehyde.

The principle established by Kinyoun that the use of a partial vacuum insures more complete disinfection and minimizes the amount of formaldehyde has been confirmed by the experience of others, and appears to rest on a good scientific basis.

The chamber was built by the Montreal Dental Supply Company and cost fifty-six dollars. It is constructed of galvanized sheet iron, No. 20 gauge, rectangular in form with rounded edges. The inner dimensions are five feet by forty inches by twenty-eight inches, the latter diameter being that necessary to pass through the average doorway. The inside is stayed by light gas pipe, spirally arranged, through which, if desired, steam can be passed. The head is made with an air-tight rubber joint between flanges of wrought angle-iron bolted together. A decided saving in space could have been effected by having the flange turned inward instead of outward.

I have been able to secure a vacuum of from four to five inches in a few minutes with a hand pump, but have refrained from carrying the collapsing-pressure test further. The weight is about two hundred pounds, which myself and my laboratory assistant have been able to carry about without much effort. We had expected that the chief trouble would be with stairways, but the real difficulty is in the tendency of doorways to open off passages without leaving enough room to turn. My next chamber will be built smaller. The apparatus can also be used as a closed chamber without vacuum, by placing a formaldehyde lamp inside or by blowing in formalin vapor. In either case less vapor is required than when disengaged free in the room. Some preliminary experiments have also been tried in the direction of using a large rubber bag as the vacuum chamber.

In December, 1896, I had already tried the plan of having the discharge pipe of an autoclave, used for generating the gas for formalin, lead through a safety valve set at a pressure of fifty pounds, in order to prevent escape of the vapor at a lower pressure than is consistent with freedom from polymerization. This device has since been independently adopted by the Sanitary Construction Company, of New York, with the same object.

I wish to express my thanks to Dr. Peter Brown, of Montreal, for having taken great interest in working out the details of construction. As to the practical value of such an apparatus, I can not yet speak, as my experiments have only recently commenced. Theoretically, anything which will permit of complete disinfection being done in the infected premises and lessen the amount of formaldehyde required should be of service, especially in localities without a regularly organized disinfection staff having enough work to keep them constantly employed, and when the climate is unsuitable for the larger forms of portable disinfectors. My experience has been that an inclosed space is necessary, if complete disinfection of more than surfaces is desired. I have to thank Dr. Kinyoun and Professor Robinson for having aided me in obtaining the apparatus designed by them.

ENCEPHALOCELE AND PECULIAR BRAIN ACTION.*

By A. P. BROWN, A. M., M. D.,
FORT WORTH, TEXAS.

Anatomical incompleteness during the stage of gestation is not an uncommon event, and some of these defects are not really inimical to healthy life; but those of the nervous centre, the brain, or of the spinal column are usually of such marked and enervative kind as to engage our most earnest attention and best surgical skill. Those of the spinal column, while disfiguring, deforming, and depressing, are usually not so grave as those that exist in and about the brain, and these congenital defects are often ascribed or credited to causes other than the true ones; sometimes from superstition or for want of knowledge of the true laws of Nature, or from want of ability to ascribe the defect to the perverted cause when unperverted would develop the natural amount of true tissue.

In the case which I now present for your consideration the deformity, or rather the want of development, of the normal amount of bone substance was the result of tardy ossification, and was truly congenital insufficiency, and not accidental, nor from maternal impressions, as supposed by some, and was a tumor five by six inches, dependent from the cerebellum through an aperture in the lower portion of the occiput. It was normal in color, and hæmic circulation appeared to be as free as in other parts of the body; it appeared to contain a small quantity of fluid (but this was not definitely determined by exploration), and contained what from handling appeared to be true brain substance.

This would have been a fine case in which to develop the use to our profession of Professor Röntgen's X-rays scotograph, or Professor Salvini's screen and lens, or fluorescence color (from the cornice tube) of Edison, as this new development in the art of radiography might have shown the true contents of the tumor.

By slight pressure a small portion of the tumor could be returned to the cavity of the cranium, and this handling did not appear to give pain to the child. After the first ten days of baby life some muscular disturbance was evident and vitality was diminished; but this in part was sustained by chloride of ammonium and the mother's milk, when the child was sufficiently aroused to nurse, or drink the mother's milk when too feeble to nurse. I suspected cleft palate, but this did not exist, nor any other deformity except the tumor. The child could hear, but never cried.

The mother was satisfied the child could see; hence another unusual occurrrence of want of amblyopia where there is a tumor of the cerebellum.

That the child could hear was evinced by its being startled by sudden noises.

The age of the child prevented the determining whether the aphasia was amnesic or ataxic, and Broca's discovery that the centre of articulate speech is in the third convolution of the brain led me to think the encephalon about the island of Reil might be dislocated, as this point in the left side of the brain has long been declared to be the point at which the organ of speech is located; and as I was at a loss to determine why the baby language should be absent simply from displacement of the cerebellum, and phonetic disturbances have not been previously observed and recorded as early as noticed in this case. They are usually one of three kinds—viz., alalic, those from psychic disorders (or the feeble-minded); ataxic, from violence; or from scleroses after scarlet fever or chorea. Other physiologists have limited aphasia to a disturbance of the parts supplied by the left middle cerebral artery. Now the question is, Were these parts primarily or sympathetically the cause of aphasia in the babe? or, have we yet imperfect knowledge of all the anatomy that is required in vocal sounds or language? Then, again, loss of speech or the inability to supply the right word, letter, or figure is an evidence of former knowledge of words. But here we have a babe, knowing no words (but most babies cry), unable to cry. The objective cause of this aphasia is an encephalocele. Must we consider that the inability to cry is an anatomical defect in the brain far distant from that organ from which the ability to speak is located, or Broca's region?

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* Read before the Texas State Medical Association, Fort Worth, April, 1896.

Brain anatomy is so complex that aphasia may have been the result of reflex influence; but there was no hemiplegia—the child had use of all the limbs (but feeble), and this is an evidence that there is a contradictory action of the cerebellum as compared to other ganglia of the encephalon, for co-ordination of motion is ascribed to the cerebellum. Yet the cerebellum has been entirely destroyed and no marked co-ordination of motion existed. This knowledge should warn the surgeon lest an operation in which the cerebellum is involved should compromise the action of the voluntary muscles. Again, its close relationship to the ganglia of vision of the third, fourth, and sixth nerves and the nuclei of the fourth ventricle should again warn us to be extremely careful lest we injure the brain seat of one of these functions or bodies. Again, the danger in drawing off the fluid is the probability of spasms as a result of the sudden loss of pressure on the brain from the withdrawing the fluid pressure or escape of the cephalo-spinal fluid.

This encephalocele was of such large extent as to preclude the idea of relief by surgical procedure other than a bandage to support and hold in place the dependent parts, and there was partly a hydromeningocele, as evidenced by occasional nausea and some fluctuation on taxis. This could occur as the fluid may have flowed from either of the three cerebellar vessels, or it may have been an exudate from the body of the cerebellum, or from the medulla spinalis, as the lower portion of the sac of the tumor extended below the atlas and on to the cervical vertebræ; but there was no deformity or malposition of these vertebra or cleft in them as we find in bifid spine, and even at birth the lateral portions of the occipital bones were in normal relation and contact with the parietal bones, and the anatomical conditions present readily determined that this was none of the ordinary tumors of the cerebellum. In all other parts of the body seemingly a normal condition existed. The secretions were normal, except that the urine was quite scanty, but I ascribe this to the remarkably small quantity of natural food and water taken.

This was the third child of healthy day laborers; all their other children were healthy, and no scrofulous or other hereditary taint had existed in either family.

We naturally look for muscular derangement where there is a tumor on the brain, but here we have a tumor off the brain, presenting some of the characteristics and symptoms we look for in the opposite condition (or tumor on brain), as evinced by muscular atrophy, spasms, nausea, and aphasia. There are but few cases of this trouble on record, and it is believed that this is the only one on record with aphasia the result of encephalocele of the cerebellum in a babe.

This patient lost weight rapidly. Its food did not assimilate, it could take but small quantities at a time, and it appeared "to dry up." It had several attacks of heart failure, with "sinking spells," when all appearance of life was suspended. This was several times relieved by the use of nitroglycerin, one five-hundredth part of a grain every twenty minutes with chloride of ammonium. The last attack of this kind lingered several days. Muscular rigidity with spasm occurred and terminated its life two months and a half after birth.

Had the opening in the occiput been small and the amount of brain tissue extending from the hernia been small also, I should have advised closing the opening by vivifying a sufficient portion of the dura mater, returning the brain to the cerebral cavity, and bringing these dissected parts into apposition by silver-wire sutures and trusting to healthy repair and union; or, had the child lived long enough, would have introduced a silver plate to cover the opening and hold back the protruding parts.

Since the foregoing was written my attention has been called to the case of a business man, keen in intellectual powers, who, though not paralyzed, and perfectly able to talk, suddenly lost the memory of certain letters and figures—viz., d, g, q, x, and y, and 6, 7, and 8. These became total strangers to him, and he could not read or write, or add any sums or words containing these figures or letters, but could use all other letters and figures except these enumerated intelligently. He could not tell the time by his watch. Experience has taught us this defect is from disease in a small area of the brain.

In children, paralalia or dyslalia may be from mental weakness, or from mechanical causes, or catarrh of stomach, and is prodromous. Ireland noticed that a defect of speech was sometimes associated in a peculiarity of handwriting. I have under my observation a child who at three years old showed a rare natural ability as an artist. He could readily make a picture without a copy, but he drew the pictures "upside down," or the reverse of the usual professional form. His voice was clear, and he enunciated words at that age distinctly. Later he began to stutter. There is no defect in the vocal organs, throat, or nose, but he is subject to croup. He is rather a remarkably bright boy.

I have noticed this peculiar brain trouble in two other of my cases of ataxic aphasia unaccompanied by right hemiplegia. In one case agraphia also occurred, and the knowledge of these defects troubled the patient exceedingly—all his efforts, for several weeks, to speak being a total failure. His voice gradually returned, first as a whisper, and gradually grew stronger. But when his voice had returned he could not remember my name twenty-four hours, and afterward told me he associated me with his childhood's family physician. Before he could speak I had another physician see him who I knew belonged to a secret benevolent society to which he belonged, and he demonstrated to this physician his perfect recollection of the secret work. All his efforts for several months at writing were a perfect failure, but in three years after the accident I received a letter from him grammatically and orthographically correct. The other was aphasia from overexertion and what I diagnosticated syphilitic embolism. As he was an uneducated man, I could not determine whether agraphia was present. The peculiarity in his case was that he could not pronounce the names of his intimate acquaintances for a long time, yet he could readily tell the number of miles to all the surrounding towns. From this I infer that there are peculiar or special parts of the brain in which the knowledge of figures is developed separate from the point at which a knowledge of letters is located.

Might a number of such cases, compiled and studied, help us to determine much of the previous undeveloped knowledge of the minutiæ of the brain or mind action, perhaps leave us to determine whether the mind has a separate or independent memory? We know that the action of nicotine, morphine, and traumatism sometimes suspends some functions of the brain, and they are often renewed or revived by medicines, remedies, or time. Then the question occurs, Have we a mind memory and a brain memory; or does mind exist separate from consciousness and brain memory?

ON THE CHEMICAL BEHAVIOR OF EOSIN AND GENTIAN VIOLET TOWARD NORMAL AND DIABETIC URINES.

By LUDWIG BREMER, M. D.,
ST. LOUIS.

In several previous communications, one of them in this *Journal*,* I have described a method by which the selective affinity possessed by the red blood-corpuscles in diabetics for a certain staining principle in an eosin-methylene-blue compound can be demonstrated.

The idea naturally suggested itself to me to try the coloring effect of this staining reagent, which yields such striking diagnostic differences between diabetic and non-diabetic blood, on diabetic and non-diabetic urines. The observations made thus far justify indeed the presumption that it is not the blood of diabetics alone upon which the neutral stain has a specific action, but that it can also be employed in urinary examinations. My experiments in this direction are not, however, concluded yet. I shall publish these observations in a future communication.

The peculiar reaction about to be described below relates to a mixture of eosin and gentian violet. By a series of observations and conclusions I have found that by means of these two aniline colors it is possible to diagnosticate diabetes aside from the demonstration of sugar.

In order to obtain an idea of the specific action of certain aniline dyes on urine make the following experiments: Add a small quantity of bluish eosin (which is more acid than the yellowish variety), say about one fortieth or one thirty-fifth of a grain, to about an inch and a half of normal urine in a test tube. The staining material must be finely powdered. It will be observed that the powder is readily dissolved in the urine, which, according as it contains more or less coloring matter (pigment), assumes a yellowish or bright-red color.

Now add to the same quantity of healthy urine contained in a second test tube the same quantity of finely powdered gentian violet as prescribed for the eosin experiment. A very marked contrast will show itself in the staining capacity of the gentian violet. If the fluid contained in the test tube were water, a very deep violet solution would immediately result. But healthy or, more properly speaking, non-diabetic urine has almost no solvent power on the dye just mentioned. Instead of readily dissolving and quickly diffusing throughout the specimen of urine, as is the case with eosin, it remains on the surface, where, after a while, it forms a thin film covering the fluid, and, on gently shaking the latter, it is apt to adhere to the wall of the test tube undissolved. If, now, the contents of the tube be shaken up thoroughly, undissolved particles of the dye, sometimes aggregated in lumps, will be seen suspended as inert, non-staining masses throughout the fluid. In other words, whereas healthy urine is eosinophilous, having a strong affinity for the acid stain, it is refractory as a dissolving agent to gentian violet; it is gentianophobous, if it be permitted to coin this word.

At all events, only a faint violet color, just a suspicion of it, will be observed under ordinary circumstances, even when a considerable quantity of the alkaline dye has been added to the urine.

Again, by mixing eosin with gentian violet in the proportion of two parts of the former to three of the latter, still more striking phenomena are obtained than by the employment of either alone.

On adding a small quantity of this mixture (one fortieth to one thirtieth of a grain) to about two inches of normal urine it will be seen that the eosin is taken up by the urine with great avidity, the resulting color being the same as the one described above when eosin alone is employed, while the gentian violet floats as a thin film spread over the surface of the liquid.

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* An Improved Method of Diagnosticating Diabetes from a Drop of Blood. *New York Medical Journal*, March 7, 1896.

If, now, diabetic urine is substituted and the series of experiments repeated, the following phenomena will be observed:

Eosin (added alone) is easily dissolved in it, perhaps not so readily as in healthy urine. Gentian-violet powder, when added, will float on the surface of diabetic urine for a while, but soon a stratum of a rich bluish-violet color will be seen starting from the film, especially when the fluid is gently shaken. If left undisturbed, preferably in a warm atmosphere, blue- or violet-stained strands of varying thickness will be seen to project into the fluid underneath the film.

If, now, the eosin-gentian mixture is employed in the experiment, the eosin will quickly dissolve, some of the heavier particles of this substance sinking rapidly to the bottom of the test tube. The blue- and violet-stained strands dipping into the fluid underneath, like the rootlets of certain small water plants that grow on the surface, are still more marked and characteristic than those seen in the experiment made with gentian violet alone. If the fluid is gently shaken it will be found that the strands or the stratum of gentian-stained fluid behave toward the eosin-colored mass of the urine like oil does to water. There is an indisposition to mix, the gentian-colored portions showing well-defined lines of demarcation separating them from the rest of the fluid.

In order to obtain quick results it is well to slightly warm the fluid to be tested. The following plan has proved to me the best and most satisfactory: Take two test tubes having the same calibre and thickness of walls; prepare specimens as above described, one containing healthy, the other diabetic urine, using eosin-gentian for both. Expose the bottoms of both test tubes at the same time to a gas or alcohol flame for a few seconds, seeing to it that both specimens receive approximately the same amount of heat. Dipping the tubes up to the surface level of their contents at short intervals into water heated to near the boiling point is still more advantageous and lessens ambiguity of results. This process insures greater evenness of the heating process, favoring exactness. It will be seen that a deep blue or purple cloud will form near the surface in the diabetic urine at a time when the healthy specimen remains unaltered. A slight shaking will facilitate the dissolving process. If the temperature of the test-tube contents is increased by repeatedly exposing both samples at short intervals to the flame or the hot-water bath, a cloud, due to the dissolving of the gentian violet, will also appear in the non-diabetic urine. This is, however, of a dull reddish or brown-red tint. If the heating be continued near to the boiling point, a diffuse, deep violet, almost blue, stain will mark the specimen of diabetic urine, whereas the non-diabetic shows a red-brownish color. In order to carry out the experiment successfully it will be well to hold the two test tubes closely together by means of a ribbon, and examine their contents at short intervals when exposing them to the heat.

Unfortunately for the diagnostic exactness and importance of the experiment, the urine of diabetes insipidus behaves like that of true diabetes. Again, urine of lower specific gravity than 1.013 shows a similar reaction. But, whenever urine above 1.015 gives a positive reaction—*i. e.*, shows the blue color—it is a case of diabetes. I have, as in my blood test for diabetes, so by this means, been enabled to diagnosticate diabetes where the sugar had temporarily disappeared in consequence of dieting or other causes. On the other hand, in some cases of transitory glycosuria, even when the percentage of sugar was relatively high, the experiment has proved negative, the reaction being that of healthy urine.

The test is sometimes, like other tests of organic, and still more animal, chemistry, doubtful, but generally it is reliable. Thus, there is a class of patients whom I have called sugar-liners in analogy with the border-liners of psychiatry. In these, different examinations may yield different and ambiguous results. On the whole it may be safely stated that a person whose urine approaches the positive test is not in a state of satisfactory metabolic equilibrium. The ambiguous reaction is comparable to the suspicious intense darkening of the urine showing itself with Nylander's test; although in such instances the presence of sugar is not demonstrable, there is, nevertheless, evidence of disturbed metabolism. I have often seen that suspicion on Nylander's test (of course where other reducing substances could be excluded) tallied with ambiguity of the eosin-gentian method.

What causes the gentian violet to be dissolved in diabetic urine when the normal secretion proves refractory? It might be surmised that the degree of acidity or alkalinity plays a part in the production of the phenomenon. This, however, is easily disproved by adding either of acids or alkalies in small quantities to the urine under examination. The result is not thereby altered. Nor is it any of the other substances met with in diabetic urine. Thus, neither acetone nor diacetic acid will produce the reaction when added to healthy urine. The same is true of grape sugar. It seems to me, however, that it is the coloring or rather one of the coloring principles that helps to render the urine refractory to gentian violet. At all events it is the colorless diabetic urines which yield the most striking color reactions. Those presenting a greenish shimmer are particularly adapted for the experiment. That it is a coloring principle of a specific and not of indifferent character which prevents the violet color of the gentian violet from manifesting itself is proved by adding a quantity of Bismarck brown to the colorless diabetic urine, enough to give it approximately the tint of normal urine. It does not prevent the reaction.

Again, temporary glycosuria generally yields a negative result. Thus a patient who had for several months albumin in his urine, with a specific gravity varying from 1.014 to 1.018, suddenly passed urine of a specific gravity of 1.031, containing two per cent. of sugar. Here the eosin-gentian test was negative. The same was true of a person who habitually passed urine varying between 1.032 and 1.040 without sugar, but showing often Gerhard's reaction with ferric-chloride solution.

Whether the method will prove of great clinical value I do not know. Nor do I maintain that it is the most perfect of the aniline color tests. Its distinctive character lies in the employment of the dry powder, not the solution. The more finely the dyes are rubbed up together the better the result. If heat is improperly —*i. e.*, without due caution—employed the experiment may prove doubtful or confusing. The most unequivocal results are obtained by adding the eosin gentian to the urine to be tested and waiting about forty-five minutes for the reaction to take place in a moderately warm room. The dark-colored diabetic urine characteristic of a certain class of patients does not yield the striking reaction, but if the control test is made with healthy urine and heat is cautiously applied, the violet-colored clouds will make their appearance much earlier than those appearing even in healthy urine when heated up to a certain point. As in all experimental work, experience and routine is necessary to obtain unequivocal results.

Again, as in all experiments with aniline dyes, where a differentially diagnostic stain enters into play, so in this instance, the source whence the material is obtained is of great importance. Some of the dyes are nearly useless. It seems that it is principally the gentian violet upon the selection of which the greatest attention has to be bestowed. But the quality of the eosin too influences results.

Thus far Merck's preparations, sold under the names of aniline red and Hoffman's violet, have proved most satisfactory. In some instances material procured from the Henry Heil Chemical Company of this city has proved equally serviceable and, seemingly, superior. Where the dyes obtained from the latter firm are manufactured I could not ascertain. There may be, and probably are, other sources that will prove more advantageous than the two named. In determining the reliability of the reagent it is necessary to test the eosin-gentian mixture with healthy urine. If ethylene blue is substituted for the eosin-gentian mixture, it will be found that diabetic urine turns blue or purplish-blue, whereas non-diabetic urine shows a green color. The contrast is very marked. No application of heat is necessary. So far, light (both in color and in weight) urine has yielded these results. The urine of diabetes insipidus, however, and "nervous urine" approaching 1.000, behave toward ethylene blue as it does toward the eosin-gentian mixture.

THE
NEW YORK MEDICAL JOURNAL,
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Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MARCH 13, 1897.

A NEW OSTEOPLASTIC AMPUTATION OF THE FOOT.

Professor Z. Samfirescu, director of the laboratory of operative surgery and topographical anatomy of the Jassy faculty of medicine, and his assistant, Dr. H. Solomovici, have devised a new osteoplastic amputation of the foot which they describe in the February number of the *Revue de chirurgie*. It does not seem to have been performed on the living subject yet. The authors remark that it is a modification of Quimby's operation analogous to Pasquier and Le Fort's modification of Pirogoff's. Quimby, they say, in order not to deprive children of the epiphyseal cartilage of the tibia, divided the calcaneum vertically and interposed the posterior portion, retained in the flap, between the malleoli without removing anything from the tibio-fibular mortise.

The authors describe their operation as follows: As guiding points for the flap incisions they take the tubercle of the scaphoid bone internally, a corresponding point above the fifth metatarsal bone externally, and the outer border of the insertion of the tendo Achillis. The thumb and forefinger of the left hand, spanning the sole of the foot, with the hand supine, are placed one on each of the two corresponding guiding points. The distal part of the foot is bent downward and inward, and the point of the knife is inserted near the third guiding point, the outer border of the insertion of the tendo Achillis, whence a horizontal incision is carried forward to the immediate vicinity of the end of the external malleolus, and then still farther forward to the other external guiding point, just above the tubercle of the fifth metatarsal bone. Then the incision is carried over the instep toward the scaphoido-cuneiform articulation, the foot being held outward, until it reaches to the tubercle of the scaphoid bone.

Then, with the left hand pronated and embracing the dorsum of the foot, the foot is held up toward the leg, and the plantar incision is made. It is deep, and, beginning at one of the two corresponding guiding points —the tubercle of the scaphoid bone in the case of the right foot—it forms a loop in front of the calcaneo-cuboid articulation and extends to the other corresponding guiding point over the fifth metatarsal bone. All the muscles and tendons are then cut to the bones. The dorsal flap is dissected up to the tibio-tarsal articulation, and the plantar flap to the calcaneo-cuboid articulation.

The next steps are the tibio-tarsal disarticulation and a horizontal section of the calcaneum. The joint is attacked from the outer side, as advised by Farabeuf. An assistant holds the leg flexed at a right angle with the thigh, with the knee turned inward and the lower part of the leg resting on the edge of the table. With the dorsal flap raised, the external ligament is divided beneath the end of the malleolus, opening that portion of the joint which is found between the malleolus and the outer articular surface of the astragalus. By this incision the three external ligaments are divided, the anterior and posterior astragalo-peroneal and the calcaneo-peroneal. The foot is now turned inward, and the slender anterior and posterior ligaments are divided. The fat lying upon the calcaneum is removed, exposing the insertion of the tendo Achillis, and in front of that tendon is placed the saw for making the section of the calcaneum. Almost a finger's breadth of the bone is removed posteriorly, but, anteriorly, the section stops beneath the lesser apophysis of the calcaneum. The section is made from behind forward and from within outward until the saw reaches the calcaneo-cuboid joint, at which disarticulation is then performed. In this procedure it may be well to remove the anterior cartilaginous portion of the calcaneum for a distance of from a third of an inch to an inch, especially when the operation is one of necessity and there is not enough left of the soft parts to admit of fashioning the flaps according to rule.

The malleoli and the tibio-fibular mortise are prepared to receive the lower segment of the calcaneum in the following manner: The skin over the malleoli is dissected up to the base, but the periosteum is left in place. The articular cartilage of the malleoli and of the mortise is scraped, preferably with a raspatory. As the mortise presents an antero-posterior concavity, the anterior and posterior lips of the hollow are cut away with scissors, in order that the surface may be plane for the coaptation of the cut surface of the calcaneum. Then, still with the raspatory, the periosteum is separated from the calcaneum on each side for a sufficient space to make the bare bone come in contact with the inner surfaces of the malleoli. The segment of calcaneum, still attached to the plantar flap, is then gently forced in between the malleoli, which hold it fast so that no bone sutures are needed. It is well to shorten the outer malleolus a little, but this is hardly necessary with the inner one.

A NEW DISEASE OF CHILDHOOD.

An infantile disease that seems not to have been described previously has recently been reported to a medical society of Christiania by Dr. Johannsen and Dr. Boeck, who have observed a number of cases independently. The *Deutsche Medizinal-Zeitung* for February 21st contains an abstract of the account given in the December number of the *Norsk Magazin for Laegevidenskaben.* The subjects of the disease, so far as it has yet been observed, are children who were about a year and a half old when they were attacked. The first symptom, which is hardly noticed by the parents, is the formation of blebs around the anus and on the genitals. The blebs soon break and give place to raw surfaces. Then similar blebs appear on the hands and feet. At the same time those parts assume a bluish-red appearance and are finally almost covered with blebs of different sizes. The same lesions make their appearance on the knees, but in smaller numbers and symmetrically arranged.

The children become extremely restless and cross, and at the same time they have an extraordinarily wild and troubled look. By this time they have entirely lost the power of speech, also the ability to walk. The bullous eruption seems to be accompanied by intense itching. For a number of weeks there may be successive crops of these blebs, some of which heal while others leave weeping areas. At the end of eight weeks there is no further eruption, but the sites of the former blebs, especially on the hands and feet, are bluish and swollen and feel indurated. The toe nails are white and split into fibres. During the entire time that the children were under observation, the length of which is not mentioned in the *Zeitung's* abstract, the faculty of speech did not return.

The treatment consisted in the use of soothing and protective applications, wine of iron and cinchona, and potassium bromide at bedtime as a sedative. It is remarked that this interesting combination of a skin disease and disturbed function of the central nervous system, occurring at a definite age, has not been more closely described, and the conjecture is expressed that it is connected with abnormal processes of ossification at the base of the cranium, such as Virchow has described as being associated with cretinism.

ITEMS.

The St. Louis Medical Society.—At the last meeting, on Saturday evening, the 6th inst., the following papers on the indications and limitations of cœliotomy were to be read: The Liver, by Dr. H. H. Mudd; Abdominal Traumatism, excluding Gunshot Wounds, by Dr. W. B. Outten; Gunshot Wounds of the Abdomen, by Dr. Otto Sutter;

The Spleen, by Dr. Waldo Briggs; The Kidney, by Dr. W. A. McCandless; The Stomach and Duodenum, by Dr. Hugo Summa; Intestinal Obstruction, by Dr. H. C. Dalton; Non-traumatic Perforation, by Dr. A. F. Bock; Intestinal and Pancreatic Neoplasms, by Dr. E. Borck; The Appendix, by Dr. A. H. Meisenbach; Hernia, by Dr. F. J. Lutz; Colotomy, by Dr. Leon Straus; Peritonitis, by Dr. Pinkney French; The Bladder, by Dr. G. W. Broome; The Falloppian Tubes, by Dr. F. D. Mooney; Malignant Disease of the Uterus, by Dr. G. H. Bond; Benign Disease of the Uterus, by Dr. G. F. Hulbert; The Ovaries, by Dr. L. H. Laidley; Cæsarean Section, by Dr. B. M. Hypes; Ectopic Pregnancy, by Dr. J. W. Smith; and Exploratory Cœliotomy, by Dr. J. G. Brown.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 9, 1897:

DISEASES.	Week ending Mar. 2.		Week ending Mar. 9.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	8	5	6	2
Scarlet fever	188	9	171	13
Cerebro-spinal meningitis	4	3	0	1
Measles	157	11	164	5
Diphtheria	227	23	210	35
Croup	5	2	9	7
Tuberculosis	290	132	229	118

Foreign Health Reports.—The following statistics relating to small-pox, yellow fever, cholera, and plague, have been received in the office of the supervising surgeon-general of the Marine-Hospital Service:

Small-pox.

Alexandria, Egypt	Jan. 29–Feb. 4		2 deaths.
Barcelona, Spain	Jan. 1–31		31 "
Bombay, India	Jan. 26–Feb. 2		3 "
Calcutta, "	Jan. 16–23		14 "
Corunna, Spain	Feb. 6–13		1 death.
Dublin, Ireland	Feb. 6–13	2 cases,	1 "
London, England	Feb. 6–13	38 "	2 deaths.
Madras, India	Jan. 23–29		3 "
Madrid, Spain	Feb. 10–17		2 "
Moscow, Russia	Feb. 6–13	5 "	1 death.
Naples, Italy	Feb. 13–20		1 "
Odessa, Russia	Jan. 31–Feb. 13	49 "	14 deaths.
Osaka, Japan	Jan. 4–17	669 "	259 "
Prague, Germany	Feb. 6–13		6 "
Rio Grande do Sul, Brazil	Nov. 29–Dec. 26	25 "	5 "
Rotterdam, Holland	Feb. 6–13	2 "	
St. Petersburg, Russia	Jan. 30–Feb. 6	23 "	5 "
Trieste, Austria	Feb. 6–13	2 "	1 death.
Vera Cruz, Mexico	Feb. 18–25		1 "
Warsaw, Russia	Jan. 31–Feb. 6		10 deaths.
Yokohama, Japan	Jan. 7–28	93 "	17 "

Cholera.

Calcutta, India	Jan. 16–23	42 deaths.
Madras, "	Jan. 23–29	1 death.

Yellow Fever.

Santiago, Cuba	Feb. 20–27	1 death.

Plague.

Bombay, India	Jan. 26–Feb. 2	516 deaths

The New York Academy of Medicine.—At the last meeting of the Section in General Surgery, on Monday evening, the 8th inst., the following papers were to be read: Massage in the Treatment of Fractures, by Dr. George Woolsey; A Report of a Case of Strangulated Hernia in a Child of Four Months; Operation; Recovery, by Dr. Charles N. Dowd; A Report of a Case of Septicæmia, with Recovery, after the Use of Streptococcus Antitoxine, by Dr. Howard Lilienthal; and When shall we Operate for Cholelithiasis? by Dr. Carl Beck. Dr. A. L. Fisk and Dr. A. E. Gallant were to present patients.

The License to Practise in Georgia.—An esteemed correspondent has informed us that we were in error in a statement published in a recent issue to the effect that Georgia was among the few States in which registration with the county clerk was the only requirement for the license to practise. It seems that Georgia has had a board of medical examiners for more than two years.

A Tribute to M. Tarnier.—An anonymous bard sings the praises of the renowned obstetrician in the following acrostic, published in the *Journal de médecine de Paris* for February 21st:

> Tu vieillis comme un sage, et ton forceps vainqueur
> A dans le monde entier affirmé sa valeur,
> Rendu par ton génie à la France épuisée
> Nombre d'enfants chétifs au trépas dévolus.
> Inventer la couveuse, arche sainte et sacrée,
> Et d'un nouveau bienfait doter l'humanité,
> Recommande ton nom à la postérité.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Medicine, on Tuesday evening, the 9th inst., Dr. W. D. Greene was to read a paper entitled Cystitis, which was to be discussed by Dr. Grosvenor and Dr. Hartwig. Dr. W. C. Krauss was to report a case of tumor of the frontal lobe of the brain, and exhibit the specimen.

The Doctors' Club of the City of New York.—At the last regular meeting, on Wednesday evening, the 10th inst., the programme included the presentation of papers, the demonstration of specimens, reports of cases, and a discussion on The Treatment of La Grippe and its Sequelæ, which was to be opened by Dr. Edward Broquet.

The Richmond Academy of Medicine and Surgery.—At the last meeting for February, on Tuesday, February 23d, a discussion on Gastralgia was to be opened by Dr. Landon B. Edwards.

At the last meeting on Tuesday, March 9th, a discussion on Chloroform in Labor was to be opened by Dr. John N. Upshur.

The Society of Medical Jurisprudence.—At the one hundred and twenty-fifth regular meeting, on Monday evening, the 8th inst., Mr. Stephen C. Baldwin, of the New York Bar, read a paper entitled Are the Doctors all Criminals?

Change of Address.—Dr. Whitmore Steele, to No. 825 Park Avenue, New York.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Period from February 6 to February 28, 1897, inclusive:*

MEAD, F. W., Surgeon. Granted leave of absence for seven days from March 2, 1897.

BANKS, C. E., Surgeon. Detailed for special duty on Ford's Theatre Commission. January 16, 1897.

KALLOCH, P. C., Passed Assistant Surgeon. Granted leave of absence for four days from February 19, 1897.

WASDIN, EUGENE, Passed Assistant Surgeon. Granted leave of absence for seven days from March 4, 1897.

KINYOUN, J. J., Passed Assistant Surgeon. To proceed from Washington, D. C., to Havana, Cuba, for special temporary duty. February 15, 1897.

VAUGHAN, G. T., Passed Assistant Surgeon. Detailed in charge of the Division of Sanitary Reports and Statistics of Bureau and attending surgeon, port of Washington, D. C. February 24, 1897.

GEDDINGS, H. D., Passed Assistant Surgeon. Detailed by the President as technical delegate to the International Sanitary Conference, to be held in Venice, Italy. February 12, 1897.

WERTENBAKER, C. P., Passed Assistant Surgeon. On being relieved from temporary duty at Philadelphia, Pa., about March 9, 1897, to rejoin his station at Delaware Breakwater Quarantine. February 27, 1897.

BLUE, RUPERT, Assistant Surgeon. Granted leave of absence for ten days from February 8, 1897. Upon expiration of leave of absence to proceed from New York to San Francisco Quarantine Station for duty. February 8, 1897.

OAKLEY, J. H., Assistant Surgeon. Granted leave of absence for thirty days from February 8, 1897. Upon expiration of leave of absence to proceed to Philadelphia, Pa., for duty. February 27, 1897.

Norman, Seaton, Assistant Surgeon. Granted leave of absence for ten days from February 8, 1897.

Prochazka, Emil, Assistant Surgeon. Upon being relieved from duty at Delaware Breakwater Quarantine, about March 10, 1897, to proceed to Reedy Island Quarantine for duty. February 27, 1897.

Tabb, S. R., Assistant Surgeon. Granted leave of absence for fourteen days from March 10, 1897.

Jordan, W. M., Assistant Surgeon. When relieved from duty at San Francisco Quarantine, about March 1, 1897, to proceed to Marine Hospital, San Francisco, Cal., for duty. February 8, 1897.

Society Meetings for the Coming Week:

Monday, *March 15th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

Tuesday, *March 16th:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); New York Odontological Society; College of Physicians of Philadelphia (Section in Ophthalmology); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; Baltimore Academy of Medicine.

Wednesday, *March 17th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); Medical Society of the County of Allegany, N. Y. (quarterly); New Jersey Academy of Medicine (Newark).

Thursday, *March 18th:* Medical Society of the Missouri Valley (Lincoln, Nebraska); New York Academy of Medicine; Brooklyn Surgical Society; College of Physicians of Philadelphia (Section in Gynæcology); New Bedford, Massachusetts, Society for Medical Improvement (private).

Friday, *March 19th:* New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Births, Marriages, and Deaths.

Born.

Jones.—In Houma, Louisiana, on Tuesday, January 26th, to Dr. and Mrs. R. Fleming Jones, a daughter.

McKenna.—In Walton, N. Y., on Sunday, February 28th, to Dr. and Mrs. E. D. McKenna, a son.

Married.

Dickson—Sentell.—In New Orleans, on Wednesday, February 24th, Dr. William L. Dickson, of Shreveport, Louisiana, and Miss Claudia Sentell.

Smith—Smith.—In Bartow, Florida, on Thursday, February 25th, Dr. William F. Smith, of Glenn Springs, South Carolina, and Miss Patra Lee Smith.

Watson—China.—In Sumter, South Carolina, on Tuesday, March 2d, Dr. J. J. Watson, of Columbia, South Carolina, and Miss Elberta China, daughter of Dr. Alfred J. China.

Died.

Martin.—In Golden, Illinois, on Saturday, March 6th, Dr. Luther A. Martin.

Price.—In Rochester, N. Y., on Sunday, March 7th, Dr. Edward J. Price, in the thirty-second year of his age.

Randolph.—In Lakeland, Louisiana, on Wednesday, March 3d, Dr. Peter Randolph, aged sixty-seven years.

Sterling.—In Oakland, California, on Tuesday, March 9th, Dr. George A. Sterling, of Southampton, N. Y., in the fifty-fifth year of his age.

Sylvestre.—In Houma, Louisiana, on Friday, March 5th, Dr. Felix A. Sylvestre, in the fifty-second year of his age.

Letters to the Editor.

THE LICENSING OF SPECTACLE-FITTERS IN THE STATE OF NEW YORK.

401 Montgomery Street, Syracuse, N. Y., *March 3, 1897.*

To the Editor of the New York Medical Journal:

Sir: I entirely agree with Dr. Hubbell that the training of an optician does not make him competent to prescribe glasses for the eyes at any age. As a matter of fact, however, opticians in increasing numbers *are* adjusting glasses to the eyes of persons of all ages, and that in spite of the existing medical law.

The suggestion that the present bill should be amended so as to debar even the opticians who pass the proposed State examination from fitting glasses to the eyes of any person under twenty-five years of age was intended simply as a stepping stone to debarring them later from prescribing for any eyes at any age. That age was named because it was thought that such a limitation was as great a one as a popular knowledge of the subject and public opinion would permit.

The passage of the amended bill with this additional limitation would certainly result in a vast improvement over the present deplorable condition of things, for it would limit the number of spectacle-fitting opticians and provide for a certain standard of efficiency among them, at the same time taking out of their hands altogether the cases they are least competent to fit.

It was put forward, however, rather as a suggestion of one possible intermediate step toward the goal at which we are all aiming, than as a definite proposition.

If it has served in any degree to draw attention to this subject, the importance of which is by no means generally appreciated, its purpose will have been sufficiently accomplished.

There are doubtless other solutions. But, as the defeat of the present bill is the object toward which our energies should be directed, I will refrain from discussing them.

In determining the future settlement of this question, however, its past history and present condition can not be safely disregarded.

As in the *future* the correction of all ocular anomalies will be, and will be recognized to be, wholly within the province of the physician, so also it must not be forgotten that within the memory of men not yet old the fitting of glasses was entirely in the hands of the opticians.

The *present* is a transition period, and, although large numbers of physicians have made themselves competent to do this work by special education and training, the opticians have not ceased to undertake it. More than that, by reason of the establishment of so-called optical colleges or institutes, which issue what are essentially bogus diplomas, the graduate and "refracting" optician is more and more in evidence, ever encroaching on the province of the physician, gradually assuming even his title of doctor.

To permitting the present state of things to continue there are only two alternatives:

1. The rigid enforcement of the present medical law or of one equivalent to it.
2. The adoption of some intermediate step, in other words, a temporary compromise, which would finally place the work where it properly belongs, in the hands of trained physicians.

The former of these alternatives is as yet untried, and even our New York friends, who are most strenuous and uncompromising in their opposition to the bill, admit that the present conditions of their law courts, etc., are not such as to encourage them in the institution of lawsuits.

Simply to kill this bill, insisting on the purely medical character of the work, and then to let things go on as before, is surely inadequate, to say the least.

Personally, I am opposed to any measure calculated to give permanent recognition to the pretended rights and competency of opticians to do this work, and am in favor of all measures tending to put the graduate and "refracting" optician and all his kind "in the way of ultimate extinction." F. W. MARLOW, M. D.

CRETINS IN AMERICA.

1 WEST FRANKLIN STREET, BALTIMORE, *March 5, 1897.*

To the Editor of the New York Medical Journal:

SIR: Will you kindly allow me the use of your columns to ask for information on the subject of cretinism in America? I have been detailed by the American Pædiatric Society to take part in the discussion on Internal Secretions at the Congress of American Physicians and Surgeons, in Washington, on May 5th, and I am anxious to present the experience of American physicians on the use of the thyreoid extract in the treatment of cretinism. I wish brief statements (1) of the name, age, and sex of the patients; (2) of the length of time the thyreoid extract has been given, and with what results; (3) whether any patient cured by treatment has been able subsequently to abandon the use of the extract; and I should also like to have photographs showing the effects of the treatment.

I shall, of course, give full credit to any of my colleagues for the information they may kindly furnish.

WILLIAM OSLER, M. D.

P. S.—I have the details of the cases already published in this country, but shall be glad of any additional data as to the subsequent history.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-first Annual Meeting, held in Albany on Tuesday, Wednesday, and Thursday, January 26, 27, and 28, 1897.

The President, Dr. JAMES D. SPENCER, of Watertown, in the Chair.

(*Concluded from page 301.*)

Practical Points relating to the Diagnosis and Management of Syphilitic Brain Diseases.—Dr. E. C. SPITZKA, of New York, presented a paper with this title in which he considered the diagnosis between genuine melancholia and a somewhat similar condition observed in the initial period of syphilitic dementia. He said that the true melancholiac was sad because he could not be anything else; the other was depressed because he was unable to attend to his business and suspected that his friends realized this. The former suffered from insomnia, while the melancholiac of the initial period of syphilitic dementia slept perfectly through the night, and often also through the day. The true melancholiac was universally neglectful of his dress; the other was very particular about certain parts of his dress and negligent about other portions. The true melancholiac shrank from company; the syphilitic melancholiac was irritable, and his symptoms varied greatly from day to day. The syphilitic finally drifted into a condition in which slight, but characteristic, changes in the medulla oblongata were found. The diagnosis was important, because proper treatment in the early stage might prove radically remediable. In his experience, the common error had been that of too exclusive reliance on the iodides. His own initial treatment was always with mercury, preferably by inunction. These patients were usually over forty-five years of age, and suffered from renal insufficiency.

Dr. F. R. STURGIS, of New York, said that these patients often threatened suicide, but seldom attempted it, for in syphilitics the power of coming to a decision was lost. Their melancholia developed apparently from totally inadequate causes, and they often exhibited sudden alternations from extreme depression to a more natural temper. Unquestionably mercury was our mainstay in these cases, but the iodide played an important part, because its action was very much more rapid than that of mercury; it would often hold in check the more serious subsequent symptoms, and the rapid improvement that it caused in the symptoms often settled the diagnosis. The time and the doses of an iodide were the most important points in the successful treatment of nervous syphilis. An amount of from three hundred to six hundred grains of iodide of potassium in the twenty-four hours would make all the difference between failure and cure.

Dr. L. D. BULKLEY indorsed the views of the reader of the paper as to the value of a certain amount of mercury with the iodide of potassium. It enabled us to accomplish the same result with a greatly diminished dose of iodide. It was his custom to prescribe inunctions, or one or two mercurial baths a week, along with the use of the iodide internally.

Dr. WILLIAMS said that if in these cases of melancholia the temperature remained subnormal the greater part of the time for several successive days, we were justified in suspecting late syphilis. Absolute rest in bed for from three to six days was important, and during this time it would be found that the temperature would gradually rise.

Dr. D. F. SHERMAN also indorsed the view that it was important to use mercury in liberal doses, along with the iodide.

Dr. SPITZKA said that he had intended to state that these syphilitics often contemplated suicide, but only actually committed it on the impulse, and without premeditation. Although gastric irritation was quickly produced in ordinary persons by large doses of iodide, in the cases under discussion very large quantities of the iodide not only were tolerated, but often seemed to act like a charm.

The Treatment of Locomotor Ataxia.—Dr. Landon Carter Gray, of New York, read this paper. He said that a study of seventy-seven cases of locomotor ataxia recorded in his case-books had led to one conclusion—that in every instance the symptoms had been improved by treatment, and in a few the improvement had been startling. In most of them it had been satisfactory. In his opinion, rest was the most important part of the treatment, for every muscular movement involved a strain on the diseased parts. In the severer cases the patient should be in bed for weeks, whereas in the milder ones a few hours a day in bed might be sufficient. The amount of rest required varied greatly with different individuals. Whatever might be the *rationale,* it was certain that antisyphilitic treatment would often have a most startling effect on the progress of the case.

Erythromelalgia.—Dr. Henry L. Elsner, of Syracuse, reported a case of this very rare condition. It had occurred in a washerwoman, and the first symptoms, headache and flushings of the face, had developed in 1893. Subsequently she complained of pain in the hands, and soon afterward a maculo-papular erythema developed on the hands. The pain was so exquisite that she described the sensation as that of being "consumed by a living fire." Gradually erythematous spots formed on the knuckles and tips of the fingers and thumbs, the lesion being severest on the thumbs. Curiously enough, while this erythema was present, there developed a true Raynaud's gangrene on the tips of the thumbs, with a gradual separation of the distal phalanx. The only explanation that he could offer was, that as a result of the prolonged distention of the blood-vessels the intima had become thickened and the circulation sufficiently obstructed to cause this gangrenous process.

Strophanthus.—Dr. Reynold W. Wilcox, of New York, presented the result of twelve years' study of this drug. He said the reason that strophanthus had been considered by some observers to be uncertain was that there were four distinct species of strophanthus. His own observations had been made with *Strophanthus Kombé,* the same preparation as had been used in Fraser's original investigations. He drew the following conclusions: 1. That strophanthus increased the muscular action of the heart by direct action on the muscle itself. 2. That it operated more rapidly than any other cardiac drug. 3. That it practically had no effect on the size of the blood-vessels. 4. That it regularly favored elimination by the kidneys. 5. That unless too frequently repeated, it had no cumulative action. 6. That it was unlike the other cardiac drugs in acting only on the muscle of the heart. 7. That it was about three hundred times as strong as the same weight of digitalis, and three or four hundred times as powerful as the same amount of caffeine. He recommended the use of strophanthus instead of digitalis in cases in which digitalis usually acted badly, in which the prolonged use of it caused dangerous vascular spasm.

Discussion on the Relation of Impure Drinking Water to Disease, and the Cure and Prevention of the Latter.—Dr. George Blumer, of Albany, opened this general discussion with a paper entitled *Diseases which can be directly traced to Contaminated Drinking Water.* He said that the most common mineral contamination of water was lead. This was dissolved by acid water while passing through lead pipes. Of the diseases due to animal organisms, might be mentioned malarial disease and amœbic dysentery, although the cause could not be isolated, and the natural habitat was not known. The evidence of the water-borne origin of malarial disease was not very conclusive. Of diseases due to vegetable organisms might be mentioned typhoid fever, Asiatic cholera, and certain diarrhœal diseases. Although these diseases were not always water-borne, the evidence that they might be so transmitted was conclusive.

Dangers of the Domestic Use, other than drinking, of Contaminated Water.—Dr. Rowland G. Freeman, of New York, presented this paper. He said that the greatest danger was from milk contaminated by impure water. It had not been until the publication of the article of Dr. W. A. Kahn, of the Wesleyan University, in 1894, that it had been demonstrated that oysters might prove the means of disseminating typhoid fever. It was now known that the typhoid bacilli would live longer in oyster juice than in water, and longer in water contaminated by sewage than in clean water.

Methods of Purification of Impure Water.—Dr. T. B. Carpenter, of Buffalo, took up this part of the subject. He stated that, although as far back as 1839 London had been supplied with water purified by sand filtration, it was only quite recently that the real efficiency of this method had been demonstrated. He cited experiments on this method of purification, showing that 97.58 per cent. of the bacteria were removed. No mechanical filter could be considered efficient unless used in connection with some coagulant, such as alum. As yet but meagre reliable data were at hand concerning the efficiency of these mechanical filters, but, so far as our present knowledge went, it was pretty clear that this method possessed superior advantages.

Methods of Prevention of Pollution of Water.—Dr. E. K. Dunham, of New York, read this paper. He said that one of the best methods of preventing the pollution of water was by allowing putrefactive changes to occur in the superficial layers of the soil, in the presence of an abundance of oxygen. When thoroughly carried out, this process should destroy all pathogenic germs, and the method was applicable on a small scale to private country residences, thus doing away with the obnoxious cesspool.

The Life History of the Typhoid Bacillus outside of the Body.—Dr. F. C. Curtis, of Albany, read this paper. He said that the typhoid germs remained indefinitely in the soil, but probably did not retain their vitality for many days in sewers, cesspools, and privy vaults. These bacilli retained life for a long time in running water, and were not destroyed by freezing. Aerial transmission of the disease was possible only when the germs were taken into the digestive tract.

The Bacteriological Diagnosis of Typhoid Fever.—Dr. J. S. Ely, of New York, read only a portion of his paper. He referred to the practical difficulties connected with finding the specific bacteria or their products, the toxines liberated by them in the body, and certain substances formed in the blood as a result of its reaction to the specific bacteria.

Typhoid Fever in Children.—Dr. W. P. Northrup, of New York, said that not a single case of typhoid fever had been known to occur among the many thousand children that had been under the care of the New York Foundling Asylum during twenty-five years, and he had never met with the lesions of this disease in two thousand autopsies made upon children under three years of age. Out of the four hundred cases of typhoid fever in the epidemic at Stamford, there had been only four among little children.

The Importance, and a Practical Method, of Disinfection of the Excreta of Typhoid Patients.—Dr. W. Gilman Thompson, of New York, read this paper. He said that a 1-to-500 solution of corrosive sublimate, rendered acid to prevent precipitation of the mercury as an albuminate, constituted a cheap and powerful disinfectant, but it was objectionable in cities on account of its injurious action on the plumbing. A ten-per-cent. solution of carbolic acid could be substituted. The bedpan should contain at all times at least a pint of the disinfectant solution, and should be kept covered. After each stool, the patient's perinæum should be cleansed with a 1-to-2,000 corrosive-sublimate solution, and thermometers, rectal tubes, and syringes should receive careful attention, as should also the linen. In the country, the stools should be mixed with sawdust, and cremated or buried in a trench four feet deep. The disinfection of the stools should be continued for at least ten days after the temperature had permanently returned to the normal.

Professor William T. Sedgwick, of the Massachusetts State Board of Health, spoke of the danger of bathers and picnickers contaminating water supplies. He said that the city of Lawrence had furnished an interesting object lesson regarding the prevention of typhoid fever. Formerly it had had an unusually large number of cases of typhoid fever, but since the installment of a municipal filter in connection with the water supply the number of cases of typhoid fever had been quite insignificant.

Double Murphy-button Anastomosis.—Dr. J. H. Glass, of Utica, reported a successful case of this kind, in which the obstruction was due to a sarcoma of the colon. In his opinion, no method was so rapid and so certain as that with the Murphy button.

Some Cases of Disease of the Testicle.—Dr. L. B. Bangs, of New York, reported five cases illustrative of difficulties of diagnosis. He said that many cases of neuralgia of the testicle might be due to unsuspected accumulations of pus between the testicle and the cord. In all cases of disease of the testicle in which there was doubt as to the nature of the process one should resort early to exploratory incision.

A Rare Complication of Acute Rheumatism.—Dr. Eugene Beach, of Gloversville, reported a case in which orchitis had developed after a man had slept in a damp bed. This was followed by rheumatic pain in the muscles of both legs, and later by mild cystitis and urethritis. Then there was an exacerbation of the orchitis, quickly followed by an attack of acute articular rheumatism. Careful search had failed to show any infection.

Notes of Cases in Suggestive (Hypnotic) Therapeutics.—Dr. H. S. Drayton, of New York, reported some cases illustrative of the power of hypnotic suggestion—a power which he considered to be almost unlimited in many disorders.

Dr. William James Morton, of New York, said that a long experience with hypnotism had led him to the belief that it was a pernicious practice, in that it lessened one's powers of resistance, and so degraded the patient both morally and intellectually.

Dr. Drayton replied that if such an unfortunate result ensued, it was the fault of the hypnotizer; he was sure his patients would all say that the will had been strengthened by his method of employing hypnotism.

The Management of Clubfoot.—Dr. A. M. Phelps, of New York, in a few brief remarks on this subject, said that proper manipulation and gradual supercorrection of the deformity should be begun as soon after birth as the condition was recognized; that where this treatment did not succeed by the time the infant had reached the age of three months, it was best to perform his "open operation"; that where there was actual bone deformity, it might be necessary to divide the neck of the astragalus, perform a cuneiform osteotomy on the os calcis, remove the cuboid and scaphoid bones, or even perform Pirogoff's amputation. He said that if the foot was supercorrected, the weight of the body subsequently would prevent the tendency to relapse. Out of the five hundred "open operations" that he had done, it had only been necessary to resort to osteotomy seventeen times.

Stricture of the Rectum; its Ætiology and Treatment.—Dr. Joseph M. Mathews, of Louisville, read a paper with this title, which was, in large part, a reply to certain criticisms that had been published by Dr. Kelsey. He said that after an experience in the treatment of over three hundred and sixty cases of stricture of the rectum he had come to the conclusion that benign strictures of the rectum were very infrequent. He had not met with a single case in which such a stricture was due to dysentery, and from a pathological standpoint it could not often be the seat of such a stricture. Syphilis, in his opinion, was the cause in about sixty per cent. of the cases.

The Surgical Treatment of Cancer of the Rectum.—Dr. Daniel Lewis, of New York, read this paper. He did not consider an operation justifiable unless there was a fair prospect of being able to remove the disease completely. He looked upon the old Volkmann operation as less dangerous, and therefore preferable to the Kraske operation. In women, he would operate by way of the vagina.

The Proper Method of Treating Internal Hæmorrhoids.—Dr. Robert T. Morris, of New York, read this paper. He characterized the method of injecting piles with carbolic acid as very dangerous, because of the liability of septic emboli being carried from the open veins to the liver or heart. The same objection applied to crushing methods. His favorite method of treatment was by excision of the piles and suture of the incisions.

Prolapse of the Rectum.—Dr. George R. Fowler, of Brooklyn, presented a brief paper with this title, and then the subject of these rectal diseases was thrown open for general discussion.

Dr. B. Farquhar Curtis, of New York, referring to the sacral operation, said that the danger consisted not in the resection of the sacrum, but in the fact that the bowel must be attacked high up. In epithelioma of the anus, the patient sought treatment early, whereas a malignant tumor developing two or three inches up the bowel might exist without symptoms for some time, and hence the operation would not be performed until the glands had already become involved. In spite of the extravagant pretensions that had been made for colotomy, it could not be denied that it prolonged life in cases of malignant disease.

Dr. James P. Tuttle, of New York, said that he had never seen evidence that had convinced him that stricture of the rectum in syphilitic cases ever occurred without previous syphilitic ulceration. Resection of the rectum was the only safe method of curing connective-tissue strictures. The prognosis in malignant disease depended on the extent to which adjacent organs and tissues were involved, rather than upon the height to which the disease had reached.

Acute Inflammation of the Gall Bladder.—Dr. Maurice H. Richardson, of Boston, presented a paper with this title. He said that he had seen only six cases of this condition; yet, in the acute form, the symptoms were so sudden and urgent as to demand immediate operative interference. The pain was not infrequently at some distance from the region of the gall bladder, and was associated with vomiting, abdominal distention, and fever. The condition was often mistaken for appendicular inflammation. The treatment should consist in free incision and drainage of the gall bladder. The prognosis was fairly encouraging if an operation was resorted to early.

Dr. A. Vander Veer, Dr. George R. Fowler, Dr. W. G. MacDonald, and Dr. W. R. Howard reported similar cases.

The Anniversary Address—The Country Doctor.—The President, Dr. James Spencer, of Watertown, delivered the address. He spoke of the bright and the dark side of the country doctor's life, and emphasized the fact that he must needs be a "man of many parts—a drudge, a hero, a martyr ofttimes"; his sphere of usefulness was great, especially in teaching to his fellow-men the great truths of preventive medicine.

The Necessity of New Methods of Early Diagnosis in Tuberculous Disease.—Dr. J. B. Ransom, of Dannemora, presented a paper with this title, based on a careful study of ninety-six cases. He believed tuberculosis to be, within certain limits, both a self-limited and a curable disease. In the lower animals we had in tuberculin a reliable test, but we lacked as yet a safe and trustworthy means of making the diagnosis of tuberculosis in the human subject at a very early stage. It should be the rule that a tuberculous patient should never return to the environment in which he had contracted the disease. He did not look upon winds of moderate velocity as objectionable in health resorts intended specially for consumptives, for such winds served to purify the air.

Dr. E. F. Brush, of Mount Vernon, said that tuberculin was not the reliable test for tuberculosis in animals that it was generally assumed to be.

Dr. Thornbury said that not only did he personally look upon tuberculin as an absolute means of diagnosis, but numerous and authoritative opinions could be quoted in support of this view.

Hernia of a Sarcomatous Ovary.—Dr. George Seymour, of Utica, reported a case in which he had recently found at operation a large spindle-celled sarcoma constituting an inguinal hernia. The condition was apparently a very rare one. The patient had done well since the operation.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN ORTHOPÆDIC SURGERY.

Meeting of Friday, February 19, 1897.

Dr. A. B. Judson in the Chair.

The Orthopædic Treatment of Spastic Paralysis in Children.—Dr. Samuel Ketch read a paper on this subject. Patients thus affected, he said, were those whose mentality was *nil*, diminished, or normal or nearly so. The treatment should include special education of the muscles. He had never seen any advantage from the use of electricity in any form. The constant current might have a good sedative effect. Massage had but little value in these cases. Mechanical treatment was directed to improvement in locomotion or reduction of deformity, and produced its best effects in patients whose intellects were least impaired and in deformities and disabilities of the lower extremity, especially when the judicious use of the superincumbent weight corrected the elevated and inverted feet. Tenotomy was certainly a useful resort. Opposition to it was based on theoretical grounds and the results in patients who were not proper subjects for operation or whose after-treatment had been neglected. With growth there was a lessening of the spastic element, and the degree in which this had been replaced by a fixed deformity should be considered in undertaking mechanical or operative treatment. Patients in whom the deformity was the result of marked spasm resisted treatment or were liable to relapse. Apparent mental improvement occurred, with better locomotion and general improvement.

Dr. Frederick Peterson said that a great deal could be done by education of the muscles by efforts of the will, by active, not passive, movements, as, for example, using the typewriter or playing the piano in the case of a paralyzed hand.

Dr. William M. Leszynsky had seen no benefit from electricity. More could be obtained from efforts of the will. Persistent efforts to walk were sometimes sufficient to restore the function of the muscles. In cerebral palsy, of course, little could be done.

Dr. Reginald H. Sayre had found faradization a good means of giving gymnastic exercises to muscles not under the control of the patient. After various tenotomies to place the parts in normal relation to each other, we could do a great deal in the way of educating these muscles.

Dr. V. P. Gibney said that in the prevention of these deformities further advance was to be sought in researches into the underlying neurological condition.

Dr. H. L. Taylor thought that benefit was to be derived, not only in children, but also in adults, from mechanical treatment and tenotomy. The contraction was not easy to control by braces; it would return when the brace was removed. Tenotomy not only made it possible to retain the foot in position, but had a decided effect upon the spasm. The tendon was cut for the specific purpose of relieving the spasm. A very marked mental improvement followed this treatment.

Dr. H. W. Berg said that, as many of these cases accompanied idiocy, education of the muscles would apply most aptly. The sense of sight should be developed by bright colors, that of hearing by the use of bells, and increased motor ability by repeating certain motions a great number of times. Years of patient toil might thus be well spent. He was rather in favor of galvanism. In the results of meningeal hæmorrhage, education of the muscles was "love's labor lost," and, while tenotomy here had a place, the treatment was radically different from that of patients in whom idiocy accompanied spastic paralysis.

Dr. Newton M. Shaffer said that, so long as approximately normal movements could be obtained by passive motion, tenotomy was not needed. In time, however, the spastic contraction became a contracture with permanent deformity. It was only where these changes were observed that tenotomy was indicated, and the operation was then followed by much better results than when it was done at an earlier stage. Radical improvement occurred with growth, as the result of the general changes which occurred every seven years. For these reasons the time at which an operation should be performed was an important question, and a delay of two or three years sometimes secured a distinct advantage, passive exercise being practised in the mean time, half an hour or an hour each day.

Dr. Peterson said that in these cases the paralysis was not to be considered as the result of the idiocy. Degrees of idiocy, palsy, and epilepsy were all symptoms of cerebral injury received before or during parturition or within two or three years after birth. Idiocy was a symptom often associated with spastic paralysis. In idiots we found sclerosis, atrophy, and cysts, but not hæmorrhage. In spastic paralysis, while we found meningeal hæmorrhage, there were few cases in which deficient development of the brain was found post mortem. In these cases there was no irritability of the spinal cord, but there were rather exaggerated reflexes from cutting off of inhibition. Mental improvement often followed education of the muscles, but where it attended any muscular change from contraction to contracture, it was probably a coincidence. As these muscles did not react so well with the galvanic current, the faradaic would give them better exercise. The former often irritated the skin, but children rather liked the latter.

Dr. Ketch said that the benefits of special education of the muscles were best obtained in the schools conducted for the instruction of the feeble-minded.

Secondary Pott's Disease with Compression of the Cauda Equina, following Empyema.—Dr. George R. Elliott presented a specimen from a man, twenty-eight years of age, who had had tuberculous involvement of both lungs and purulent exudation into the right pleural cavity. Subsequently there had been slight lumbar kyphosis, slight motor paralysis of the lower extremities, and pain and knee-jerks varying with the position of the patient. While he was lying on the right side the pains ceased and the knee-jerks returned, and disappeared when he was lying on the left side or on the back. At the autopsy, the right pleural cavity was found filled with pus and an extradural sinus extended from the tenth dorsal vertebra, where it communicated with the right pleural cavity, to the second lumbar vertebra. The tenth dorsal vertebra was carious and the fourth and fifth lumbar were softened, with a small abscess cavity separated from the cauda equina by an area of pachymeningitis externa caseosa. The central surface of the dura was intact. The extradural sinus rested upon this caseous mass and its contents were distinct from those of the extrapachymeningitic abscess cavity. There was no microscopic degeneration of the cord. The patient had had lung trouble before any signs or symptoms of vertebral caries had appeared. Whether evacuation of the pus had been a part of the treatment, Dr. Elliott could not say, as he had not seen the patient during life.

Dr. Shaffer related the case of a man who had caries extending from the seventh to the eleventh dorsal vertebra and an abscess over the ribs. Every three or four weeks he had a cough with expectoration of fragments of the vertebræ, the general health remaining good.

Book Notices.

Die Pathologie und Therapie der Neurasthenie. Vorlesungen für Studirende und Aerzte. Von Dr. Otto Binswanger, o. ö. Professor der Psychiatrie u. Direktor der psychiatrischen Klinik zu Jena. Jena: Gustav Fischer, 1896. Pp. iv–446.

These fifteen lectures constitute a very thorough presentation of the facts that are established and the theories that are held concerning the disorder which was first described by Beard. Although the present volume gives us no information that is absolutely new, its treatment of the subject is sufficiently thorough, and many of the cases recorded illustrate so happily the various clinical phenomena of neurasthenia that it may be regarded as a valuable addition to the earlier contributions of Beard, Löwenfeld, and von Hösslin.

Beginning with a general consideration of the pathology and pathogenesis of neurasthenia, Binswanger describes the disease as standing upon the dividing line between the incomplete neuropathies and the fully developed neuroses and psychoses. He deduces the nature of the pathology from the clinical manifestations of the disease; he indulges in no speculations as to the probable morphological characters of the morbid anatomy, such as might with justice be made by analogy from the observations of Hodge and others upon the ganglion cells of animals at rest and after fatigue. Neurasthenia is a condition of the nervous centres in which they become irritable and less resistant than normal to the influence of fatigue.

Meynert used to believe that nervous weakness and nervous irritability had separate localizations. He thought weakness was cortical and irritability was subcortical. Binswanger does not hold this view, but maintains that weakness and irritability may coexist in the same functional area.

In the lectures on ætiology, the question of predisposition is very thoroughly considered. In his own cases predisposition was demonstrable in less than one half of the total number. The frequency of neurasthenia among journalists, literary men, actors, and musicians is explained in part by the trying character of their occupations. But the author regards "Bohemia" as made up of persons with hereditary nervous taint, in whom irregular hours and too prolonged exertion furnish the additional factors necessary for the development of neurasthenia or other forms of nervous disease. Although a special form of sexual neurasthenia is described, Binswanger does not believe that sexual excess alone is sufficient to induce neurasthenia. The importance of the question of masturbation has also in his opinion been overrated. Mechanical injury as an exciting cause of neurasthenia is spoken of in reference to the "traumatic neuroses." The author appreciates the importance, in the genesis of traumatic neurasthenia, of the psychical shock at the time of the accident, as well as the subsequent anxiety in regard to the pension which is allowed by the German law to workmen who have been disabled by injury. It may be remarked in this connection that Strümpell has recently maintained that this last factor, the question "How much shall I get?" exerts a more powerful disease-inducing influence than the others do.

In the description of the symptoms of neurasthenia certain manifestations are included which are commonly regarded as the results of conditions more serious than nervous exhaustion. Binswanger regards suicide as not uncommon in connection with the depressive and impulsive forms of neurasthenia. He says that inequality of the pupils may occur and be without sinister omen if the pupils do not fail to react to light, and thinks that attacks of palpitation of the heart, difficult to distinguish from true angina pectoris, are of frequent occurrence.

The following classification of the clinical forms of neurasthenia is made: 1. Psychic. 2. Motor. 3. Dyspeptic. 4. Angeioneurotic. 5. Sexual. All but the first of these are generally familiar. The cases which are classified under the first are in themselves familiar as those of morbid, impulsive, highly neurotic individuals, with systematized fears and imperative concepts. It is only within recent years, however, that these persons, who in many ways resemble the paranoic, have been classed as cerebral neurasthenics. They are in many ways insane, yet not insane enough to be deprived of their liberty. Whether their cases properly belong to the class of neurasthenia or not, future years may show.

The chapter on treatment is sensible and complete. The dominant thought which pervades it is that therapeutic measures are to be directed, not toward a disease, but toward a sick person, and that improvement or cure depends upon giving strength to the organism as a whole.

The whole tone of Dr. Binswanger's book is systematic and thoughtful. Although it may be too exhaustive, or otherwise inaccessible to general medical readers, it is to be hoped that it may exert a needed influence. That influence is to shape general medical thought so that neurasthenia may be accorded a pathology, and that it may be more generally believed that beneath the querulousness, irritability, and complainings of the chronic invalid are serious conditions of exhaustion of the nervous centres. That the neurasthenic may be regarded, not as a person who could be well if he would, but as a patient who is really ill, and who can be made well only by proper treatment and care.

Les Variétés cliniques de la folie en France et en Allemagne. Par M. J. Roubinovitch, chef de clinique des maladies mentales à la Faculté de Paris. Avec une préface par M. le Professeur Joffroy. Paris: Octave Doin, 1896. Pp. 276.

In all ages it has been the lot of the insane to stand out as an enigma before the searching eye of medicine; and in this age of progress we can say little more of the diseases of the mind than that we do not yet understand them. This age, however, the age of discoveries, may perhaps bring us, in the near future, some clew by means of which we shall begin to understand how to analyze the diseased brain, or why one insane person inclines to suicide while another, on the contrary, carries his strife for self-preservation to the extent of killing somebody that seems to him to imperil his existence. Already the alienists of different lands are looking to one another for a mutual understanding—seeking to know why a given mental affection is diagnosticated in one country on a basis entirely different from that of another. It is only natural that this perplexing question should claim our attention, and the more we become dissatisfied with the existing methods of classifying the insane the sooner we shall reach the point of classifying them right.

In analyzing this able work of M. Roubinovitch's one can not help congratulating him on the happy thought which he has conceived of bringing face to face the two main European schools—the French, to which he himself belongs, and the German, which he uses as a pivot about which revolves his conscientious and scientific analysis of cases. These are designated by different names, not only by the French and the Germans respectively, but also by the same leading German author, Krafft-Ebing. He also shows that there is a great tendency among the Germans to base their diagnoses on the symptomatology of the disease. Clinically, this fact is of far greater importance than appears at first sight, for, as the author himself puts it, we must not allow ourselves to base our diagnosis on the symptoms which a given disease presents. We must rise higher and analyze the disease pathologically, since this is the only important point for the clinician from the standpoint of the prognosis and the treatment. Belonging to the French school, the author concludes, and very justly, we think, that the Germans plunge too deep into a fantastic realm in search of a guide for their classification. He shows that they base their diagnoses partly on psychical and physical embryology of the brain, a field of science which, unfortunately, we do not yet understand. Besides the studied analysis of the various distinctive names which are applied to one and the same disease by the French and the German authors respectively, the author gives us a comparative table of the clinical varieties of insanity as adopted by Krafft-Ebing, Schulle, Kraepelin, and Magnan. The most striking feature of this work, however, lies in the vivid manner in which the author analyzes the cases which have now become classic. And one can not help recognizing the great ability with which he has executed his work.

Of the 276 pages, 57 are devoted to a comparative study of paranoia—that panacea for all medico-legal ills. The book should prove a helpful guide to the profession in general and to the asylum physician in particular in the performance of clinical work, since the salient points brought out in it never find their way into the text-books. An English translation of this volume should prove a valuable addition to our literature on insanity.

The Diseases of the Stomach. By Dr. C. A. Ewald, Extraordinary Professor of Medicine at the University of Berlin, etc. Translated and edited, with Numerous Additions, from the Third German Edition, by Morris Manges, A. M., M. D., Assistant Visiting Physician to Mount Sinai Hospital, etc. Second Revised Edition. New York: D. Appleton & Company, 1897. Pp. x–602. [Price, $5.]

The five years that have elapsed since the publication of the first edition of the American translation of this work, and the progress that has been made in our knowledge of diseases of the stomach, have required this new edition, which is based on the last German edition, that of 1893. We use the word based deliberately, because the translator has not been content with a mere metaphrase, but by means of carefully selected additions and a paraphrastical adaptation of the original text he has succeeded in making a volume that is abreast of contemporary knowledge of the subject.

One of the improvements that are immediately noticed is that the former arrangement by lectures has been abandoned for one by chapters, and the lecture style of the text has been done away with. Another betterment is the addition of thirteen illustrations that are not in the German edition.

In the first chapter, on methods of examination and determination of acidity, the translator has incorporated the results of Martius's and of Schüle's investigations in regard to the contents of the stomach during fasting. The directions in regard to the examination of the stomach contents have been elaborated materially, and the more recent chemical tests are noted. The translator deems Uffelmann's test for lactic acid and Töpfer's test for free hydrochloric acid the most satisfactory that can be used. The author holds that the estimation of peptones with the biuret reaction is always doubtful, and he advises that the digestive power of the gastric juice be determined by the rapidity with which coagulated albumin is liquefied by it. The translator describes the methods used by Hammerschlag and by Jaworski to detect pepsin, and Boas's test for rennet ferment and zymogen; he considers that Leube's test is preferable to Ewald's salol test to ascertain the motor actions of the stomach. While reference is made to the gastrodiaphane, the description of its employment and of the results is somewhat meagre.

The author omits the description of the procedure of gastrostomy in the chapter on stricture of the cardia, as it properly belongs to a text-book of surgery.

Mention is made of the attempts to estimate the acidity of the stomach contents from the urine, but so many circumstances influence these two curves of acidity that it is not feasible to deduce practical conclusions from them.

The theory that in most cases of atrophy of the stomach it is only the true secreting portion of the mucosa that is destroyed, the foveal layer remaining intact or even being hypertrophied, which is supported by the observations of Cohnheim, of Hammerschlag, and of Schmidt, is opposed to the views of Ewald, Lewy, and Freund. The translator gives the former theory though he does not commit himself to it. He states that the real condition of the mucosa must be determined clinically by a microscopic examination of the bits of tissue in the wash water used in lavage. Dr. Ewald considers that the name atrophy of the stomach conveys a false idea of the pathological condition; and, while he refers to G. Meyer's suggestion of *gastric phthisis* as a substitute for the former term, he suggests *gastric anadenia* (*Anadenie des Magens*) as a suitable designation.

In the chapter on chronic gastritis we note the reference to Turck's recent papers demonstrating the microbic invasion of the stomach from the infected mouth and pharynx, and to the use of Turck's gyromele in the treatment of the disorder mentioned.

While the author does not think that palpation of the stomach tube *in situ* is of value in making the diagnosis of gastrectasis, the translator inclines to Boas's and Schmilinsky's recently published recommendation of its value.

The translator has appended to the chapter on gastric cancer useful data in reference to the results of the surgical treatment of that condition, and he has made mention of the several non-cancerous tumors of the stomach.

Throughout the book there are evidences of careful and conscientious editing, and the volume may be recommended as giving a timely presentation of the more recently discovered facts that pertain to the ætiology, pathology, and treatment of diseases of the stomach.

Swedish Movements, or Medical Gymnastics. By Dr. T. J. Hartelius, Director of the Central Gymnastic Institute of Stockholm, Sweden, etc. Translated by A. B. Olsen, M. D. With Introduction and Notes by J. H. Kellogg, M. D., Member of the American Medical Association, etc. Battle Creek, Michigan: The Modern Medicine Publishing Co., 1897. Pp. vii–3 to 162. [Price, $1.50.]

It is surprising that, notwithstanding the great activity of the Swedes in the department of medical gymnastics, which they have made peculiarly their own, their literature has remained practically inaccessible to English readers. The work before us is an abridged edition of an authoritative work, and as such will be consulted with profit by those interested in rational therapeutics. It is much to be desired, however, that some person skilled in the matter should have the courage to break away from the bald and arid method of presentation that has been handed down, and expound the subject in the rational and attractive manner which its merits deserve.

BOOKS, ETC., RECEIVED.

Lectures on Appendicitis and Notes on other Subjects. By Robert T. Morris, A. M., M. D., Fellow of the New York Academy of Medicine, American Association of Obstetricians and Gynæcologists, American Medical Association, etc. Second Edition, Revised and Enlarged. With Illustrations by Henry Macdonald, M. D. London and New York: G. P. Putnam's Sons, 1897. Pp. viii–173.

Gelanthum; a New Watery Varnish. By P. G. Unna, M. D. [Reprinted from the *British Medical Journal.*]

Lectures on Renal and Urinary Diseases. By Robert Saundby, M. D. Edin., Fellow of the Royal College of Physicians, London, etc. With Numerous Illustrations. Second Edition. Philadelphia: W. B. Saunders, 1897. Pp. xii–434. [Price, $2.50.]

Genito-urinary Surgery and Venereal Diseases. By J. William White, M. D., Professor of Clinical Surgery, University of Pennsylvania, and Edward Martin, M. D., Clinical Professor of Genito-urinary Diseases, University of Pennsylvania. Illustrated with Two Hundred and Forty-three Engravings and Seven Colored Plates. London and Philadelphia: J. B. Lippincott Company, 1897. Pp. xix–1061.

Annual of the Universal Medical Sciences and Analytical Index. A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M. D., Paris, and Seventy Associate Editors, assisted by over Two Hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromolithographs, Engravings, and Maps. Volume I to V. Philadelphia, New York, and Chicago: The F. A. Davis Company. [Issue of 1896.]

A Practical Treatise on Diseases of the Skin. For the Use of Students and Practitioners. Fourth and Revised Edition. By James Nevins Hyde, A. M., M. D., Professor of Skin and Venereal Diseases, Rush Medical College, Chicago, etc., and Frank H. Montgomery, M. D., Lecturer on Dermatology and Genito-urinary Diseases, and Chief Assistant to the Clinic for Skin and Venereal Diseases, Rush Medical College, Chicago. Illustrated with One Hundred and Ten Engravings and Twelve Plates in Colors and Monochrome. Lea Brothers & Co., 1897. Pp. xxiii–17 to 808. [Price, $5.25.]

A Pictorial Atlas of Skin Diseases and Syphilitic

Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, member of the Academy of Medicine, etc.; Fournier, Professor of the Faculty of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Leon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1897. Part VII. Pp. 157 to 174. [Price, $3 each part.]

Des variétés cliniques de la folie en France et en Allemagne. Par J. Roubinovitch, chef de clinique des maladies mentales à la Faculté de médecine de Paris. Avec une préface de M. le Professeur Joffroy. Paris: Octave Doin, 1896. Pp. 7 to 276. [Prix, 5 *fr.*]

Transactions of the Luzerne County Medical Society. For the year ending December 31, 1896.

Twenty-sixth Annual Report of St. Catherine's Hospital, Brooklyn. For the Year 1896.

Binasal Hemianopsia with the Report of an Additional Case. By Clarence A. Veasey, M. D., Philadelphia. [Reprinted from the *Ophthalmic Record.*]

Granular Lids. By Dudley S. Reynolds, M. D., Louisville, Ky. [Reprinted from the *Journal of the American Medical Association.*]

Diseases of the Rectum as a Cause of Auto-infection, with a Report of Cases. By J. R. Pennington, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

Notes on the Treatment of Fæcal Fistulæ. By Frederick Holme Wiggin, M. D. [Reprinted from the *Medical Record.*]

The Country Doctor. By Frederick Holme Wiggin, M. D. [Reprinted from the *Medical News.*]

Shortening the Round Ligaments; Indications, Technics, and Results. By George M. Edebohls, M. D. [Reprinted from the *American Gynæcological and Obstetrical Journal.*]

On Cyclone Neuroses and Psychoses. By Ludwig Bremer, M. D., St. Louis. Read before the St. Louis Medical Society, November 14, 1896.

The Antitoxine Treatment of Diphtheria. By B. H. Detwiler, M. D., Williamsport, Pa. [Reprinted from the *Therapeutic Gazette.*]

Miscellany.

The Prevention of Colds.—In the *Nord médical* for February 15th M. G. Lemoine says that, although it is difficult to cut short a cold or bronchitis after it has run a course of several days, nothing is easier than to prevent it or to arrest it in the very beginning.

A cold, that is to say, the naso-tracheo-laryngitis which exists in the beginning of all affections of the respiratory tract, seems to be due always to the penetration of micro-organisms into the upper respiratory passages. Consequently, if care is taken to keep the mouth, the pharynx, and the nasal fossæ in a condition of asepsis, we should be able, theoretically, to avoid colds. Here, says M. Lemoine, practice responds to theory, and, in his experience, many persons who have been subject to colds have prevented them by employing the following measures: Every night and morning the mouth is washed out with a solution of about seven fluiddrachms of Labarraque's solution to a pint of distilled water, or else the following solution:

℞ Thymol	8 grains;
Alcohol	300 "
Water	1 pint.

M.

To disinfect the nasal fossæ and the back of the throat, spraying with the following solution for a few minutes at a time is recommended:

℞ Salol	8 grains;
Sodium chloride	45 "
Distilled water	16 ounces.

M.

Furthermore, the teeth should be carefully brushed and the fingers should not be allowed to touch the nose. During the day a few pastilles containing menthol may be dissolved in the mouth. If these precautions are taken, colds may be prevented during the winter and spring months.

If a cold is to be arrested, it must be done during the first hours of its evolution; during the undecided period in which there is a slight feeling of depression, with a disagreeable sensation in the region of the trachea and some obstruction of the nose. At this time also antisepsis should be resorted to, and it may be easily accomplished by measures easy of employment.

M. Lemoine states that one of his colleagues has been able to arrest colds by the daily use of from four to six capsules or pills containing oil of turpentine. The successful results of this treatment were, he says, owing, probably, to the elimination of this antiseptic product by the respiratory tract. For persons with weak stomachs, the author advises, as a substitute for this treatment, the use of a compress saturated with a fifty-per-cent. solution of carbolic acid or of lysol, the emanations from which are to be inhaled through the mouth and nose for twenty minutes at a time. It is necessary to repeat this procedure two or three times during the twenty-four hours.

Finally, if on the following day the cold still persists, the patient should take a glass of some purgative water and, several hours afterward, eight grains of quinine. In this way the digestive tract is cleansed, and in a certain degree sterilized.

A Curious Case of Religious Monomania.—The *Province médicale* for February 13th publishes the following abstract from the *Revue médicale:* Two young Russian girls left their homes for the purpose of accomplishing two expiatory pilgrimages, one to Notre-Dame of Lourdes, and the other to Rome. Several days afterward they arrived at the latter place, having made the entire journey on foot, without money, and living on charity. After many hardships they reached the tomb of the Apostles, where they fainted away. Here they were found and taken to the house of a pious woman, where, during a part of the night, they sang interminable litanies in their own language and rendered sleep impossible to those around them.

On their trying to gain admittance to the Church of St. Peter, one of the girls became greatly enraged because the gates were closed, and it was with great difficulty that she was taken to a hospital for the insane. Two days later her companion threw herself on her knees before the door of the vestry of the Church of St. Michael and demanded to be allowed to pass, and on the sexton's refusal she wounded him seriously by striking him on the head with a copper crucifix. She was then taken to the same hospital in which her friend was confined.

Antikamnia and Codeine in Laryngeal or Winter Coughs.—Dr. Walter M. Fleming (*Journal of Nervous and Mental Disease*, January, 1896) says that in acute attacks of laryngeal or winter cough, tickling and irritability of larynx, antikamnia and codeine are exceedingly trustworthy. If the irritation or spasm prevails at night the patient should take a five-grain tablet an hour before retiring and repeat it hourly until the irritation is allayed. After taking the second or third tablet the cough is usually under control, at least for that paroxysm and for the night. Should the irritation prevail in the morning or at midday, the same course of administration should be observed until subdued. In neuroses, such as neurasthenia, hemicrania, hysteria, neuralgia, in short, the multitude of nervous ailments, he doubts if there is another remedial agent so reliable, serviceable, and satisfactory, and this, without establishing an exaction, requirement, or habit in the system, as morphine does.

A Question for Anæsthetists.—In the *Lancet* for February 20th, Mr. R. Clement Lucas remarks that it must have occurred in the experience of almost every hospital surgeon that a day or two after an operation of very trivial character, in which an anæsthetic has been administered, the patient's temperature has been observed to rise very high; the wound is examined and found to be perfectly quiescent, devoid of every indication of inflammation, and completely healed, yet the skin is burning and the patient obviously ill; next a little cough is noticed, and soon rusty sputum is coughed up, indicating pneumonia. The author states that these cases have occurred too frequently in his experience to be explained either upon the hypothesis of infection prior to admission into the hospital or upon the conjectured basis of chill taken at the operation, where every precaution is taken to obviate unnecessary exposure. He has known it happen on several occasions after operations for hernia, when it might be suggested that the patient's resistance had been lowered by previous vomiting; but he says that he has observed it as frequently after many other operations of a more trivial character.

The question is, he continues, whether the apparatus used by anæsthetists may not sometimes be responsible for germ infection of the lung? Mr. Lucas speaks of hospital practice, in which some dozen apparatuses are being constantly employed and carried from patient to patient without any attempt at sterilization. Considering the enormous advance made of late years, he says, in every department of surgery for the better disinfection of everything brought into contact with a wound, it strikes him as somewhat marvelous that so little improvement in this direction has been made by those responsible for the inhalers used for giving anæsthetics. He has often thought it not altogether pleasant to see an anæsthetist blow out and distend the large bag used for ether administration by the breath of his own body, however sweet that may be, and then apply it directly over the patient's mouth. But, as matters stand now, there is no apparatus used in hospital practice, so far as he is aware, for the administration of either the A. C. E. mixture, or gas, or ether which is capable of being boiled, or which is otherwise disinfected before being applied over the mouth. If, as he suggests (and it may be susceptible of bacteriological proof), the apparatus used for giving the anæsthetic, and not the anæsthetic itself, may be responsible for lung-infecting inflammations, some radical change will soon have to be made in the apparatus, which, going from mouth to mouth as at present, seems capable of carrying infection of a kind such as he has indicated.

Bilateral Zoster of the Mouth and Pharynx.—At a recent meeting of the Société médicale des hôpitaux, a report of which is published in the *Gazette hebdomadaire de médecine et de chirurgie* for February 18th, M. Lermoyez and M. Barozzi presented a man, seventy-eight years old, who, without general symptoms, had been attacked after forty-eight hours of suffering with pain in the mouth by an eruption which occupied the palatine arch, the velum of the palate, the upper gums, and the neighboring gingivo-labial grooves. This eruption, which was formed of groups of vesicles seated on erythematous patches, formed around the floor of the mouth a zone of remarkable symmetry. Herpes was not observed on any part of the body. In the course of the next few days several fresh vesicles appeared, and twelve days after the onset of the symptoms another attack occurred, which this time was plainly unilateral, occupied the left half of the palatine arch, and was distinctly arrested at the median line. This buccal eruption lasted for about four weeks.

Relying on the perfect symmetry of the eruption, on the regularity of its bilateral distribution, which followed the course of the nervous branches, particularly of the anterior palatine nerves, on its evolution by successive attacks, and on the absence of general symptoms, M. Lermoyez and M. Barozzi gave a diagnosis of bilateral symmetrical bucco-pharyngeal zoster of the parts innervated by the second branch of the trigeminal nerve. Moreover, the last eruption, which appeared on one side of the mouth only and was limited exactly by the median line, supported this hypothesis; the two zones were symmetrical, but not synchronous, the left zone having appeared after that on the right side.

Tuberculosis of the Salivary Glands.—In the January number of the *Archives cliniques de Bordeaux* M. O'Zoux considers this subject in a long article, of which the following is the substance: Tuberculosis of the salivary glands, he says, is one of the rarest affections. Valude states that it is almost unknown, and Henocque, in the *Dictionnaire encyclopédique*, does not even mention it. Henri Hartmann, in the *Traité de chirurgie*, says "Tuberculosis of the salivary glands has never been observed clinically." It has, however, says M. O'Zoux, been easily produced by Valude by means of direct inoculation with tuberculous cultures. He made ninety inoculations in the salivary glands of rabbits with pure cultures of different degrees of activity, sixty-eight of which gave positive and twenty-two negative results.

M. Valude attributed to the mixed saliva which was formed of three principal salivas such chemical properties that Koch's bacillus could not thrive or even live in it; he acknowledged, however, that the value of this theory was entirely hypothetical, and he preferred to consider the antagonism of the micro-organisms of the mouth as a cause of the death of Koch's bacilli, so that all local inoculation became very difficult, and the buccal mucous membrane and the salivary glands were spared.

Cohnheim, on the contrary, hesitated to express himself so positively, and questioned whether all the so-called scrofulas of the lips, the mouth, and the throat and the caseification of the ganglia of the neck were not due to an immediate application of the tuberculous virus in the food. At all events, it has been shown at the present time that a number of cases of intestinal, mesenteric, and peritoneal tuberculosis are, especially in children, due to tainted food, and particularly to tuberculous milk.

Why, asks the author, has not the infection which is produced in the abdomen occurred in the buccal cavity? Is it necessary for the penetration and development of the bacillus that there must be a lesion of the mucous membrane? M. Valude maintains that it is, but the author thinks that the argument on which M. Valude bases this opinion is not good, for, he says, besides erosions, wounds are very frequent in the mouth (which would cause a considerable number of tuberculous lesions), and it is not necessary that the mucous membrane, at its junction with the skin, should be injured in order to admit Koch's bacilli; this penetration is made very easily by simple juxtaposition. This statement, says the author, is based on the experiments of Chauveau, Villemin, Parrot, Saint-Cyr, and others on the digestive tract, on those of Tappeiner, Schottelius, and Thaon on the respiratory apparatus, and on those of Cornil and Dobroklonsky on the vagina and uterus.

With regard to the destructive action of the mixed saliva, says M. O'Zoux, it may be asked why this saliva, which, after all, does not differ greatly from the three separate salivas, exercises such an energetic influence on Koch's elements, when each one of its parts has no action at all on the elements. Valude's experiments have certainly proved this.

M. O'Zoux gives an account of two cases of what seems to him to be very distinct tuberculosis of the submaxillary glands. From a clinical point of view, he thinks they are absolutely indisputable, and he thinks that the results show that tuberculosis of the salivary glands, which may be produced experimentally, exists also clinically.

The treatment should be the same as that employed in all forms of local tuberculosis; curetting should be practised as early as possible; here, as elsewhere, it is both useless and dangerous to allow the disease to gain in extent and impregnate the entire organism.

Recovery is difficult, and we should not hesitate to interfere so long as the slow progress of the lesion seems to indicate the presence of virulent bacilli in the wound.

An Association against Tuberculous Disease.—In the last number of the *Bulletin of the Pasteur Institute* Dr. Paul Gibier, the director of the institute, says that he has studied the project of the organization of a sort of association against tuberculosis. Among the plans of the association would be that of a sanatorium located in the mountains, and, for certain forms of tuberculosis, a vessel rigged and fitted up as a floating hospital. The sanatorium would be open summer and winter, while the vessel would cruise in temperate regions, changing its course with the change of seasons.

To speak outright, he says, the gist of his idea is to present to the public an object lesson, with the hope that the example will be imitated and the plan carried out on a much larger scale.

"In our modest undertaking," he says, "we would say to those unfortunates who, stricken by adversity, fall and fail to rally on account of lack of means: 'Come to us, and we will give you help. Think not that you are receiving the aid of charity; 'tis to eradicate the terrible disease which you have contracted and to prevent it from infecting other members of society who, unless protected from you, must share in your misfortune. Come, we will try to cure you; we will teach you also how to prevent your disease from spreading to your neighbors.'"

Unfortunately, he adds, circumstances do not yet allow him to put this plan into execution. He has, however, made preparations for the establishment of a sanatorium in the Ramapo Mountains, on a delightful site which he has named "Pasteur." The place is a short distance from the railway station of Suffern, N. Y., and thirty miles from New York city, in the vicinity of Tuxedo Park. On a two-hundred-acre farm, he is preparing for the furnishing of dairy and farm products to supply the sanatorium.

As he considers it desirable to give a trial to the project in question, he has decided on the following: Without waiting for better opportunities, he will start modestly, and at once open the Pasteur Sanatorium, with private rooms for the accommodation of seven patients.

On various occasions, he says, he has been consulted by physicians who had contracted tuberculosis. All of them were fully aware of the fate in store for them; several had seen the specific bacilli in their sputa. Some were poor, and, while attending to a meagre practice, were struggling to the extremity of their might to make both ends meet. Their disease might perhaps have been checked, had they rested from their labors and taken care of themselves. But how could they afford this luxury? he asks.

What then, asks Dr. Gibier, becomes of these brave men, martyrs to their profession? He has been told that, being too proud to ask assistance from the hospitals of their own town or county, many die under an assumed name in some remote hospital.

Is there anything surprising in this? he asks. The medical journals are filled with accounts of the plethora and the pauperization of the profession, and the daily papers tell us that some physicians, sick and in want, seeking in death a refuge against misery, have committed suicide, and in some instances their families have shared a like end. Meanwhile the number of medical students is increasing every year, and bacteriology, wonderfully improving practical hygiene, causes a steady decrease in the causes of disease, and consequently in the usefulness of the same proportional number of physicians. The wealthy patients are treated by the "titled doctor," and the majority of the others are absorbed by the hospitals and outside departments, the clinics, and the dispensaries. A physician who is not in the employ of one or another of these institutions runs the risk of waiting a long time for a practice, if indeed it comes at all.

For the reasons mentioned and because it is his earnest desire to be instrumental in the accomplishment of some meed of good, he has been prompted to take this step, and it is but natural, he says, that he should first seek to relieve some of the members of our sorely tried profession. Therefore the following has been resolved upon:

1. The first seven beds and private rooms set aside

for tuberculous patients are offered to physicians in reduced circumstances and suffering from pulmonary tuberculosis.

2. Admission will be granted only to patients presenting Koch's bacilli in their sputa and not having reached the period of tuberculous cachexia.

3. Applications for admission must be sent to the director of the New York Pasteur Institute.

4. If several rooms remain vacant for more than two months, they may be placed at the disposal of other persons similarly affected and belonging to liberal professions.

5. The treatment consists in the scientific application of the most modern of therapeutic means—serum treatment included.

6. Notwithstanding the most efficient therapeutic agents, pulmonary tuberculosis can not be relieved or overcome without a rich and abundant, *acidifying* and methodically regulated diet; the patient must also be supplied day and night with the purest air obtainable; hence, it is absolutely necessary that all stipulations be rigidly enforced.

7. No remuneration whatever will be asked for professional services, remedies, board, or room.

The only conditions required of the patient will be that after his recovery he shall join, as an active member, the Association against Tuberculosis, and that he shall become a fervent advocate of the prophylaxis of contagious diseases through the prevention of *misery* and "*misprocreation.*"

Dr. Gibier hopes his professional brethren will appreciate the spirit in which he advances this project. His idea is to call the attention of the public, especially the upper classes, to the necessity of making social reforms and of educating the masses physiologically. Science indicates, he says, that without these reforms the strongest, highest, and richest will never be protected from the ferments of decomposition and death which vegetate and multiply on the sordid yet fertile soil of misery and ignorance.

The American Pædiatric Society.—The ninth annual meeting will be held in Washington on May 4th, 5th, and 6th, under the presidency of Dr. Samuel S. Adams, of Washington. Besides the president's address, the preliminary programme includes the following titles: A Case of Tic Convulsif, by Dr. J. C. Wilson, of Philadelphia; A Brief Analysis of a Hundred Cases of Frank Pneumonia, by Dr. F. Gordon Morrill, of Boston; A Case of Acetanilide Poisoning in a Newborn Infant, by Dr. Irving M. Snow, of Buffalo; Antitoxine and Intubation in the Treatment of Diphtheritic Croup, by Dr. J. Lewis Smith, of New York; A Synopsis of Fifty-eight Cases of Empyema with Operation during 1896 in the Children's Service of Mount Sinai Hospital, by Dr. B. Scharlau, of New York; Adherent Pericardium in Children, by Dr. William Osler, of Baltimore; Lithæmia in Children, by Dr. B. K. Ratchford, of Cincinnati; A Case of Diphtheria of the Eye, by Dr. T. M. Rotch, of Boston; An Unusual Case of Erythema Multiforme, by Dr. Floyd M. Crandall, of New York; A Case of Œdema in Infancy, by Dr. J. P. Crozer Griffith, of Philadelphia; Multiple Purulent Arthritis with Gonococcal Vaginitis, by Dr. L. Emmett Holt, of New York; Retained Intubation Tubes; Causes and Treatment, by Dr. Joseph O'Dwyer, of New York; Hereditary Tendency in Practice, by Dr. Floyd M. Crandall, of New York; Retropharyngeal Abscess, by Dr. J. P. Crozer Griffith, of Philadelphia; Abrasion of the Umbilical Wound, by Dr. Irving M. Snow, of Buffalo; Murmurs and Heart Lesions in Infancy, by Dr. William P. Northrup, of New York; A Frequent Significance of Epistaxis in Children, by Dr. Henry Fruitnight, of New York; A Case of Suppurative Nephritis, by Dr. Rowland G. Freeman, of New York; and Varicella Gangrænosa, by Dr. W. F. Lockwood, of Baltimore.

The Comparative Value of Eucaine and Cocaine as Local Anæsthetics.—The *Presse médicale* for February 17th contains a report of a recent meeting of the Académie de médecine at which M. Reclus presented the following results obtained from experiments which had been undertaken for the purpose of studying the action of eucaine and cocaine: 1. The injection of cocaine is not at all painful, while that of eucaine causes a certain smarting sensation. 2. Eucaine is a vaso-dilator, while cocaine is a vaso-constrictor; with the former the field of operation is clouded by the blood. 3. Eucaine is certainly an excellent analgetic, although in deep operations the perception of pain seems to be somewhat more distinct than with cocaine. 4. In an operation with cocaine, anæsthesia is still complete an hour and ten minutes after the operation, while with eucaine it disappears after forty-five minutes.

If, said M. Reclus, eucaine was less toxic than cocaine, it was still to be preferred in spite of these slight inconveniences. M. Pouchet, he said, had made sixty experiments on different animals. He had recognized that the toxicity of eucaine was nearly as great as that of cocaine. He preferred the latter, which presented warning symptoms of intoxication, to eucaine, which suddenly overcame the patient without any premonitory symptoms.

The Medical Society of the Missouri Valley.—The annual meeting will be held in Lincoln, Nebraska, on March 18th, under the presidency of Dr. H. B. Lowry, of Lincoln. The programme includes the following titles: A Report of a Few Interesting Cases, by Dr. George Nusum, of Honey Creek, Iowa; A Report of a Case, by Dr. W. L. Dayton, of Lincoln; A Case of Spasmodic Tic, by Dr. John Riley, of Exira, Iowa; Trachelorrhaphy, with exhibition of a new instrument for its performance, by Dr. W. G. Henry, of Omaha; The Ætiology and Prevention of Puerperal Fever, by Dr. W. J. Findley, of Atlantic, Iowa; The Treatment of Abortion, by Dr. V. L. Treynor, of Council Bluffs; Postoperative Mania, by Dr. A. F. Jonas, of Omaha; Prolapse of the Cord, by Dr. A. D. Wilkinson, of Lincoln; Torticollis, with a Report of a Case, by James W. Cokenower, of Des Moines; Some Thoughts on the Physical Aspect of Crime and Wrong-doing, by Dr. F. S. Thomas, of Council Bluffs; Cerebral Abscess; Operation; Recovery, by Dr. J. E. Summers, Jr., of Omaha; Metastatic Malignant Disease of the Cord, by Dr. A. R. Mitchell, of Lincoln; Therapeutic Aids in Surgical Diseases, by Dr. C. C. Allison, of Omaha; Is Phlebotomy a Lost Art? by Dr. W. H. Christie, of Omaha; Aseptic Midwifery, by Dr. G. H. Simmons, of Lincoln; Adeno-sarcoma of the Nasal Sæptum, by Dr. F. S. Owen, of Omaha; A Plea for Greater Accuracy in Diagnosis, by Dr. M. H. Everett, of Lincoln; The Diagnosis of Malignant Diseases of the Stomach, by Dr. W. F. Milroy, of Omaha; An Unusual Sequela of Typhoid Fever, by Dr. H. J. Wynnett, of Lincoln; Retroversions of the Uterus, by Dr. Ewing Brown, of Omaha; and Anæsthetics in Obstetrics, by Dr. E. J. Smith, of Harlan, Iowa.

Original Communications.

RENAL TUBERCULOSIS.

By F. TILDEN BROWN.

The temporary presence of Koch's bacillus in the system does not mean the existence of that disease of which this micro-organism is the specific contagium. For we must believe that a great number of individuals remain immune to the varying numbers of this agent which reach the respiratory and alimentary tracts in the course of events incidental to the ordinary life during health. This presumption is supported by experimentation. On the other hand, there are supposedly those individuals whose tissues are inherently such that this moderate dosage is enough to institute more or less rapid establishment and dissemination of the disease and death. Between these two extremes exists, probably, a class of individuals so constituted or so rendered by environment that because of some traumatism, whether it be mechanical or associated with disease, a favorable condition is developed at some particular spot for the sojourn of the bacilli, which otherwise would be annihilated by the tissues or excreted intact.

In this last class belong numerous instances where the local disease is diagnosticated and appropriately treated either by rest and constitutional invigoration, or by radical surgical methods, and the individual remains afterward as free from all evidence of tuberculosis as he was long before.

Such cases in former nomenclature, and according to some writers of the present time, are the subjects of scrofulous or strumous disease, as instanced by such authors' reference to scrofulous states of the joints, glands, skin, or kidneys. To express a constitutional tendency these adjectives may be correct, but to use them to describe the disease appears ill advised, in view of the known pathological factor common to all tuberculous processes. When this renal affection is viewed from the standpoint of surgical prognosis it becomes of the utmost importance to ascertain whether the disease is a local or general one—terms which are approximately synonymous with operable and inoperable tuberculosis.

The subdivisions of the morphology of tuberculosis into miliary tubercles, cheesy necrosis, cirrhotic, cretaceous, and cystic formations are but different possible and more or less commonly associated manifestations of the disease, whether it occurs as a general or as a local process.

We use the term "local" as best describing a tuberculosis when we are cognizant only of an active process in a single organ or an isolated locality, even when we may, from the patient's history, suspect a pre-existing focus elsewhere, but any evidence of which, by symptoms and physical signs, we are now unable to confirm. In a certain proportion of such cases this local lesion will be a primary lesion, both in the sense of time as well as of importance, but in so many cases the lesion is a primary one only in the latter sense that the less compromising and equally descriptive term local or focal is to be preferred.

In approaching the consideration of the regional disease with which this paper has to do, renal tuberculosis, we first meet the question, How does the contagium gain access to the kidney? What are the channels of infection?

We know of but three possibilities:

First, and vastly the most common, access of the bacilli to the kidney by the blood.

Second, access of the bacilli by their multiplication and the gradual development of tuberculous granulations along the ureter or its lymphatics from the bladder—ascending urinary infection.

Third, access to the renal parenchyma through the capsule by an extension of the disease from a neighboring or some remote organ of another system.

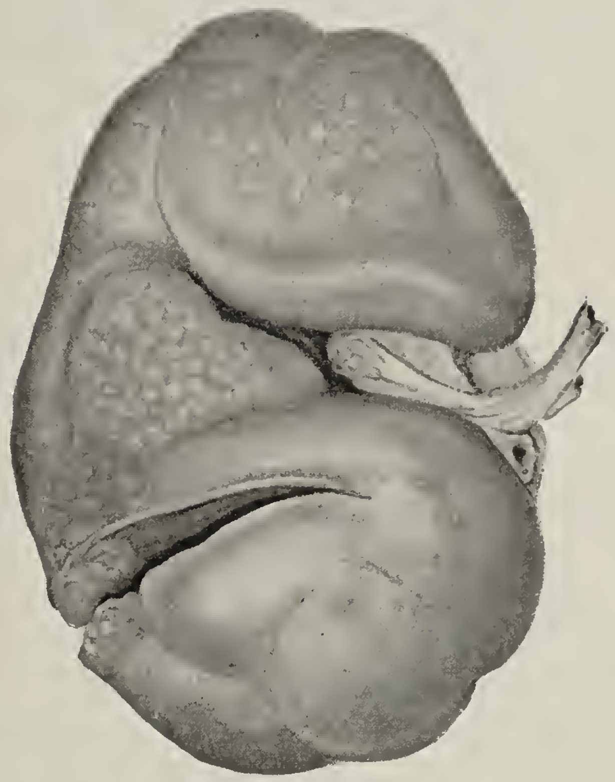

Fig. 1.—Tuberculous infection by the vascular route of the cortical portion of a kidney. Post-mortem specimen. (Brown.)

In the first class, blood infection, we meet with a wide range of possibilities during both intra-uterine and extra-uterine life. The evidence, accumulating from a variety of sources, permits no longer much doubt regarding the transmissibility of tuberculosis from mother to fœtus by way of the blood. So that this form of hereditary disease means, as was first insisted upon by Baumgarten, that the infecting germ itself, and not a dyscrasia merely, is transmitted. The only question still to be determined in this connection is how the germ passes the vascular sæptum, and whether this delicate membrane intervening between maternal and fœtal circulation must suffer some impairment of its continuity before the bacilli can pass. The same question which, in the case of the kidneys, has received within the past few years so much attention from several investigators. Long-continued clinical observation, as well as some experimentation, has quite clearly shown that much more common than this direct maternal transmission of the bacilli is the inheritance of a dyscrasia rendering individuals of certain families more susceptible to infection after birth than the average being.

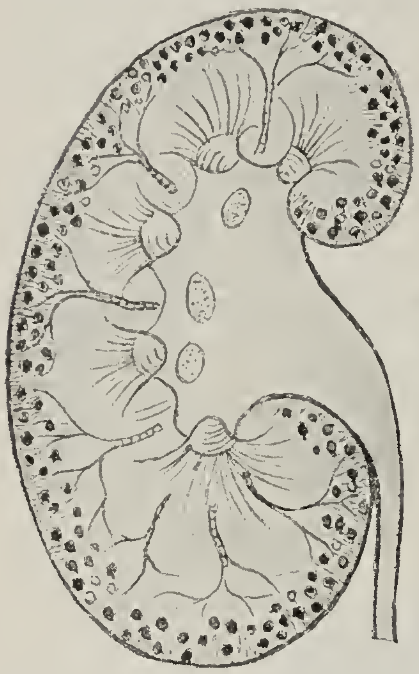

Fig. 2.—Tuberculous infection of the cortex by the vascular channels, possible later diffusion in the organ by the lymphatics. (Du Pasquier.)

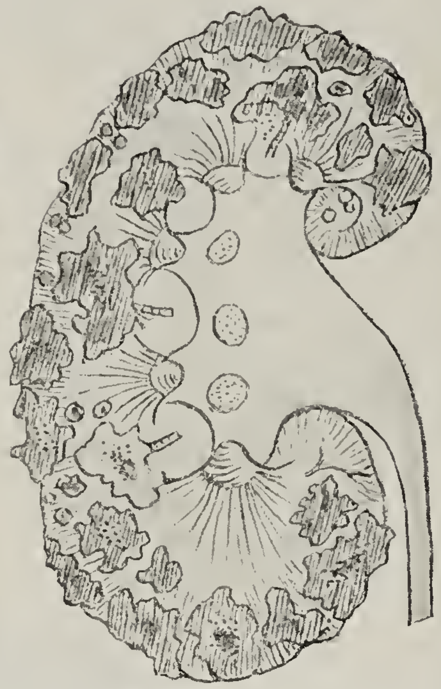

Fig. 3.—More advanced stage of cortical infection. (Du Pasquier.)

It is to be recognized that the vast majority of the human and bovine cases which have demonstrated the direct heredity of the bacilli show an advanced tuberculous state on the maternal side and a very early general miliary tuberculosis on the part of the offspring. The questions both of local and latent tuberculosis of hereditary origin are yet in abeyance, and must long remain so, for it will always be a difficult problem to solve, where the opportunities for infection at any time subsequent to birth are, as often happens, so ubiquitous, and where, at the same time, so great a range of possibility in the virulence of the contagium and the powers of resistance of the individual exists as to render the resulting disease one of great acuteness or marked chronicity.

In the post-natal state the respiratory and alimentary viscera, which communicate directly with the outer world, are obviously those which are most exposed to infection, but of the adult abdominal organs having no direct exposure, none, except the lymph nodes, are more commonly attacked by tuberculosis than the kidneys; and this possibly because of their special function of excretion, or because of a less powerful antagonism than that of the liver and spleen.

Tubercle bacilli, then, to reach the kidney by the vascular channels in the post-natal period, must ordinarily be taken up from the mucous or cutaneous surfaces by the lymphatics, advanced to the veins, then to the arteries, and by one or other of the renals brought to the kidney and presented to a glomerulus for elimination. How often this is successfully performed, and, when it is, whether an injury to the secreting membrane of the glomerulus must first occur or does finally take place, we do not know; but that the kidney during the cyclical presentation of the bacilli is in great danger of infection we can not doubt.

Weichselbaum's original demonstration of tubercle bacilli in the blood of a corpse, Meissel's demonstration of them in the blood of a living tuberculous subject, and their demonstration by Durand-Fardel within and just outside the vessels of a glomerulus, where they had not yet excited the initial tuberculous process, or given the slightest microscopic suspicion of their presence by tissue change or otherwise, are all separate links in the chain of evidence tracing the bacilli from the blood until they are presented at the renal filter. And Sherrington's experiment, No. 18, is the only instance I find to demonstrate the passage of tubercle bacilli without evident lesion of the secreting membrane.

The necessarily more or less protracted presence of the bacilli at the terminals in the renal arterioles—viz., the glomeruli—before they are either returned to the veins or excreted, render this portion of the kidney—the cortical—most prone to tuberculous lesions whither the contagium is borne by the blood. Autopsies in cases of general tuberculosis show the cortical surface often liberally studded with tubercles (Fig. 1).

When one or more tuberculous foci have started in the cortical layer, their tendency, whether as pure or mixed infections, leads generally to a final eruption into one of the calyces and the renal pelvis.

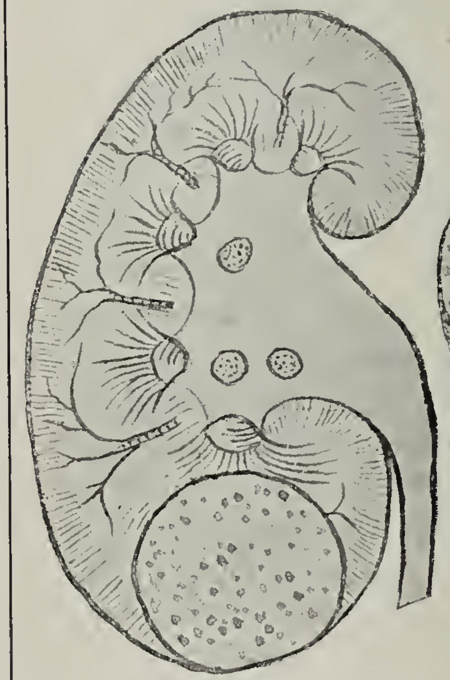

Fig. 4.—A solitary large tuberculous focus originating in the cortex by blood implantation, and extending toward the renal pelvis. (Du Pasquier.)

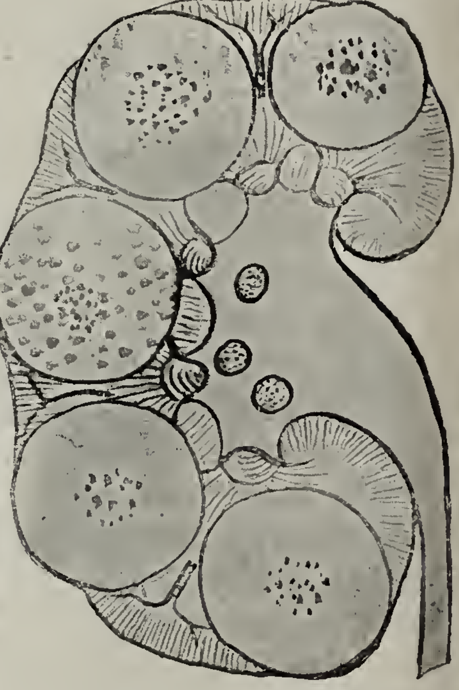

Fig. 5.—Multiple tuberculous foci originating in the cortex and extending toward the pelvis. (Du Pasquier.)

As to the ætiology of this vascular form of renal tuberculosis, the necessity of the presence of the tubercle bacillus is recognized, but in addition a certain proportion of the cases present in their histories some distinct reference to a fall or blow involving the side or back. These stories make it reasonable to infer that a temporary congestion or otherwise insignificant trauma has been the determining factor in establishing the disease, just as it is so often seen to be in a joint after injury, or in the lung after a pneumonia or an attack of measles.

The ascending urinary infection by continuity is a well-recognized but not so common process. The mucous membrane of the ureters apparently offers conditions very favorable to the life and dissemination of the bacilli. An existing vesical tuberculosis appears to have a natural tendency to reach out toward one or both ureteral openings, and from there to gain the pelvis of the kidney, the calices, apices of the pyramids, and medullary and cortical layers in the order mentioned.

It should be noted, however, that before this typical ascent is complete a distinct focus in the cortical portion may be independently planted by the blood channels.

Nor should we lose sight of the possibility of a tuberculous focus developing originally in the renal pelvis as a process secondary to the trauma there inflicted by lithiasis or a retained calculus. In such a case we might encounter a combined ascending and descending tuberculosis of one kidney.

The muscular coats of the bladder and ureters manifest a striking resistance to the invasion and the destructive processes of tuberculosis.

Two interesting cases of this have been shown, one by Meunier and the other by Chaput. In one instance an ascending tuberculosis had caused denudation of the mucous coat of the ureter near its vesical insertion, giving rise to an invaginated prolapse of the bare muscle presenting in the bladder as an attached cone.

In the other instance, a descending tuberculosis had produced a mucous invagination of both ureters into the bladder. Chaput describes the appearance as that of a large, soft, budlike hollow cone, its cavity being continuous with the ureter.

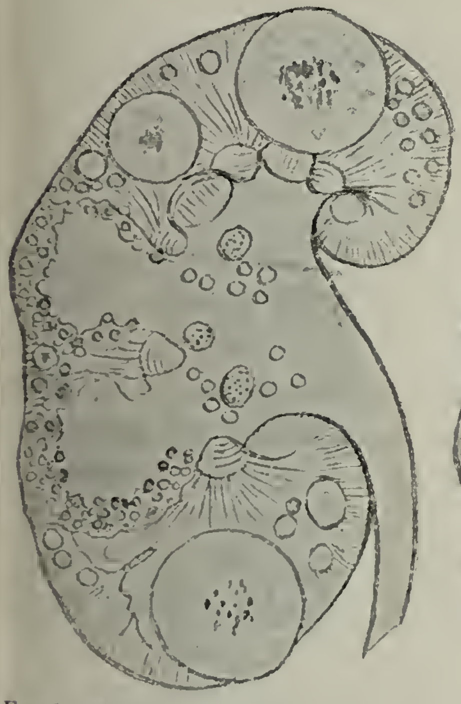

Fig. 6.—Multiple tuberculous foci of the cortex, two of which have broken into the pelvis. (Du Pasquier.)

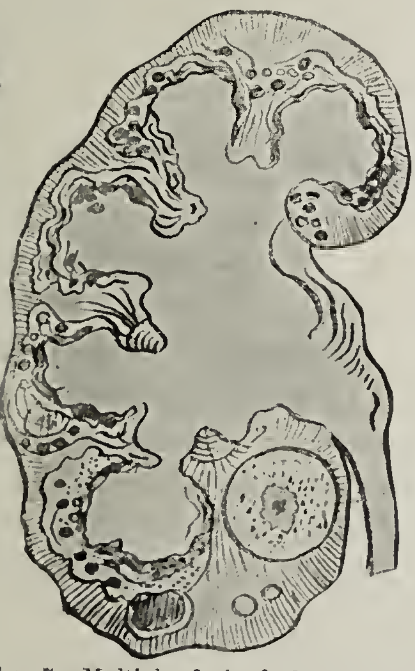

Fig. 7.—Multiple foci of the cortex, many of which have broken into the pelvis. (Du Pasquier.)

As to the immunity of the muscular coats of the bladder, Fig. 9 shows this clearly where tubercles cover the vesical surface, denuded everywhere of mucous membrane, except this intensely congested triangular patch within the sphincter, and this is slightly dissected up at its border.

The third mode of tuberculous renal infection is that by extension to the parenchyma through the capsule by indirect continuity from a tuberculosis of another organ. The occurrence of this, natural as it might appear at first thought is, however, not well substantiated. The renal capsule seems to exert the same protecting influence against such invasion as does the dura for the brain in tuberculous disease of the surrounding bone. The only examples of a successful implication of the kidney by a peripheral tuberculosis appear to occur when access is obtained by the breaking of a vertebral abscess into the pelvis or lymphatic infection of a ureter from the peritonæum, and from there continuing as an ascending process; whereas in sarcoma or adenoma the superior portion of the kidney is commonly first attacked, and this, in a certain number of the cases, is secondary to sarcoma of the adrenal, or to the presence of auxiliary adrenals occurring as embryonic implantations in the kidney, so that in the form of malignant disease extension through the capsule appears to be not uncommon.

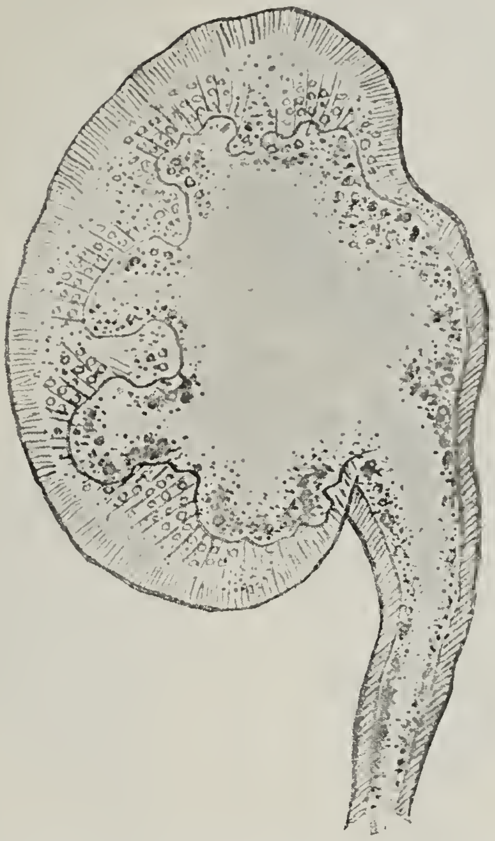

Fig. 8.—Ascending renal tuberculosis. No primary invasion of the cortex, but a gradual extension in that direction from the thickened and distended ureter, pelvis, and medulla. (Du Pasquier.)

The not very rare advanced tuberculous disease of the adrenals found at autopsy, with no evidence of the disease in the adjoining kidney, will accentuate this exemption of the organ from infection by a proximal but extracapsular lesion, and lead us, at the same time, to keep in mind the possibilities of a perinephritic tuberculosis, having its origin in the adrenal, not the kidney, and for this reason to be cautious about any radical measures directed toward the latter organ when such an abscess is opened.

In the majority of cases it is an easy matter, on examining a tuberculous kidney when removed, to determine the mode of infection.

One which has derived its contagium from the blood will in the early stage show small tubercles, generally in or near the cortex, well illustrated in Fig. 1 and also in Fig. 2 of these schematic drawings taken from Du Pasquier. The advancing steps in processes of the same mode of infection are depicted in Figs. 2, 3, 4, and 5. Finally, a stage is reached when the renal parenchyma yields to the destructive distention, and an eruption into one or more of the calices takes place (Figs. 6 and 7).

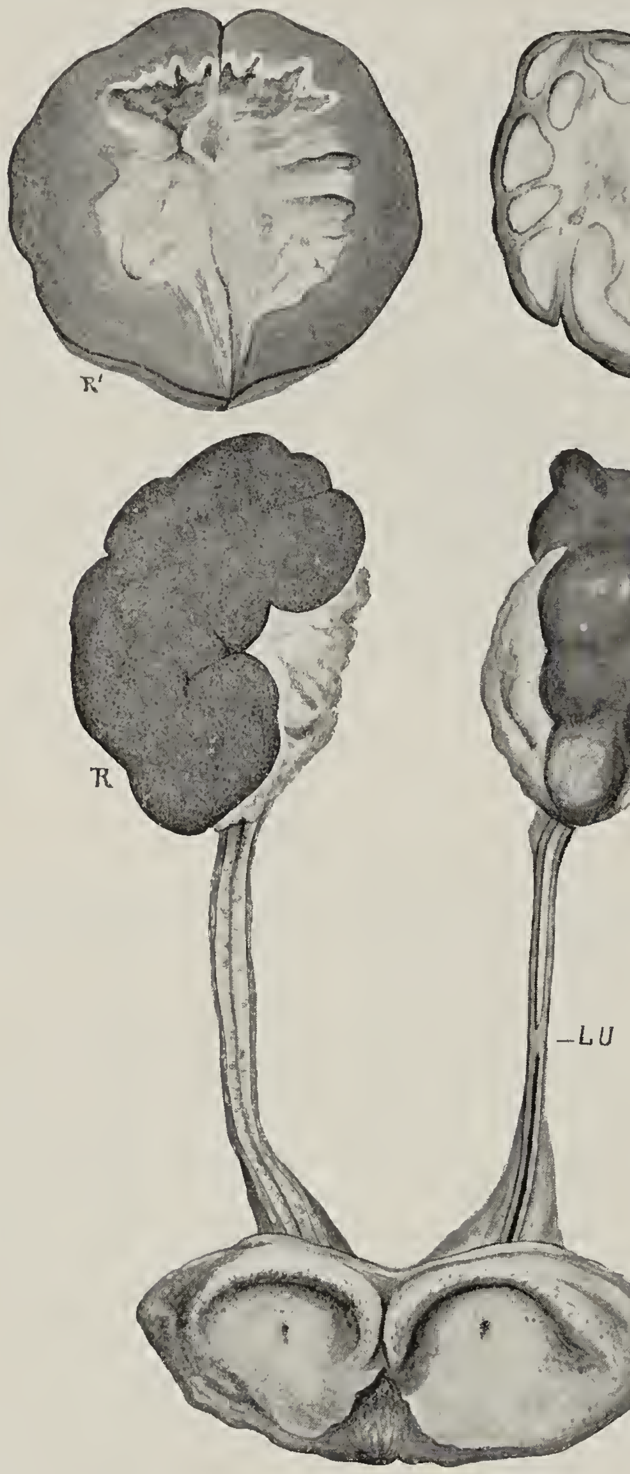

FIG. 9.—Two modes of tuberculous renal infection shown in the organs of a single individual. L', a primary cortical infection in the left kidney, the destroyed pyramids of which are filled with white, pasty material. L U, the middle of the left ureter; from the kidney to this point it is occluded by the white paste. There are no tubercles or appreciable disease in any part of this ureter. The bladder is denuded of its epithelium and studded with tubercles. Right ureter is dilated and thickened, and contains many tubercles. R', the right kidney, is enlarged, and the pelvis contains many tubercles at its upper end, and an excavating lesion is traveling toward the cortex. (Original.)

Now the conditions exist for a descending tuberculosis by lodgment of the bacilli in the ureter, bladder, or urethra, but unless ureteral occlusion happens, by a detached necrotic mass, or the bacilli encounter a favorable environment, such as a chronic posterior urethritis, the pelvis, ureter, and lower urinary tract may long escape infection, perhaps show none whatever at autopsy, as in the left ureter in Fig. 9. Despite this fact the subjective symptoms in such a case may for a considerable time be referable to the bladder only.

Thus far the recognition at autopsy of a renal tuberculosis of vascular origin is simple. But when, in its descending progress, the pelvis, ureter, and bladder become implicated, it is necessary, in order to distinguish such an ensemble from one of the ascending variety, to contrast the pathological appearances and estimate the relative ages of the lesions found at these two distant points in the urinary tract, the cortical portion of the kidney and the base of the bladder or the posterior urethra. If we find the former relatively exempt, although the pyramids and calices have disappeared, and the walls of the pelvis are greatly distended, hard, and thickened, the same condition existing more or less in the ureter, and the vesical disease far advanced (Fig. 8), particularly if the prostate or seminal vesicles show signs of antedating the bladder lesions, we may reasonably infer that the kidney has been attacked by an ascending tuberculosis (Fig. 8, and right kidney, Fig. 9, which show this ureteral and pelvic dilatation and thickening, as well as a massive excavation of the medullary part of the kidney, while the cortex is comparatively intact). Sometimes we shall find, on autopsy, one kidney which has been destroyed by a cortical infection (left kidney, Fig. 9) and its ureter free from disease, while the bladder is extensively tuberculous, and the other ureter and kidney show advanced ascending disease (Fig. 9).

(To be continued.)

THE TREATMENT OF KELOID WITH THIOSINAMINE.*

By RICHARD C. NEWTON, M. D.,
MONTCLAIR, N. J.

THIOSINAMINE may be produced from the volatile oil of horse-radish root by the addition of ammonia. The more common method of preparation is, however, by shaking a mixture of three grammes of the volatile oil of black mustard seeds with three grammes of alcohol and six grammes of ammonia water in a small flask; after standing some hours, or rapidly if warmed to 50° C., crystals of thiosinamine are deposited. This is an allyl-sulpho-urea, or allyl-sulpho-carbamide. It occurs in colorless prisms, melting at 74° C. Soluble in two parts of warm water and in alcohol or ether. It has a bitter, not persistent taste, and a gaslike odor. The solution should not redden litmus paper. According to the *National Formulary*, it was originally proposed for use in medicine by Dr. Hans Hebra (*Internat. klin. Rundschau*, 1892), who affirms that when it is injected subcutaneously it produces in lupus and other acute tuberculous diseases a reaction, attended with absorption of exudate, often with increased diuresis and clearing up of old corneal opacities. He states that it acts like tuberculin. He uses the fifteen-per-cent. alcoholic solution, injected into the back in such quantity that the patient receives four grains and a half to seven grains (0.3 to 0.45 gramme) of the thiosinamine, repeating the injection every third or fourth day. According to K. Lange the remedy is toxic in overdoses. Merck's *Index* for 1896 gives the dose internally at four to eight grains once daily, or hypodermically as above stated.

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* Read before the Society of the Alumni of the City (Charity) Hospital, November 11, 1896.

My attention was called to the drug a few months ago by an article in the *New York Medical Journal* for May 2, 1896, written by Dr. Sinclair Tousey, who, I am happy to say, is with us to-night, and will enlarge, I trust, my somewhat meagre notes upon this new remedy. It would appear that to Dr. Tousey belongs the credit of adopting this method for the treatment of keloid, and he reports one successful case. The remedy has been tried, as I said before, in lupus and various skin diseases, in myomata of the uterus, in urethral stricture, and in chronic adenitis. In the last-named condition it seems to have been successful when the enlargement of the glands was non-specific. In syphilitic adenomata, on the other hand, no absorption was noted, so that Hebra was led to think that in certain cases its action might be of diagnostic value. It is, however, in its action upon scar tissue that this remedy is of marked value. Hebra reports a case of a man with corneal opacities so extensive that he could hardly avoid collisions with people in the street; but after receiving injections of thiosinamine he could tell the direction of the wind by the weather vane on the high Rathhaus in Vienna. A number of similar cases are reported. The remedy must not be used in eye cases so long as a vestige of inflammation remains. The remedy is yet too new for its proper place in therapeutics to be known, but my own experience, which is limited to two cases, has led me to think very favorably of it. I will recite these two cases briefly, and trust to Dr. Tousey to fill in the gaps in my somewhat fragmentary paper.

Case I. *Simple Cicatrix.*—E. O., a Swede, aged thirty-one years, domestic, came into the Mountainside Hospital in Montclair in March, 1896, with extensive burns of the right side of her chest and right arm. She was treated with Thiersch's grafts, and made a good recovery. In July, when I came on duty in the hospital, the patient was still there. She felt pretty well, and was assisting about the ward. Her chief complaint was of inability to use her right arm freely, and this was easily explained by finding, on examination, a powerful band of cicatricial tissue which had formed along the lower border of the anterior pillar of the right axilla, and pinned her right arm to her side. There was also considerable scar tissue over the inner aspect of her right elbow joint. This, however, was softer, and, not having formed itself into bands, did not hinder the free action of the joint. Some thiosinamine having been obtained, a ten-per-cent. solution in absolute alcohol (the strength which, I believe, Dr. Tousey recommends) was made. Eighteen minims of this were injected hypodermically in the right deltoid muscle. The pain was very severe, but transient. The first injection was made on the 25th of July, 1896. Another one of twenty minims was made on the 29th of July. The patient complained of feeling sleepy after each injection. August 2d I injected twenty minims. During the night following the patient was troubled by nausea and distress, followed by headache and severe pains in the stomach. She spent a sleepless night, and in the morning had a severe attack of vomiting; no rise of temperature was noted.

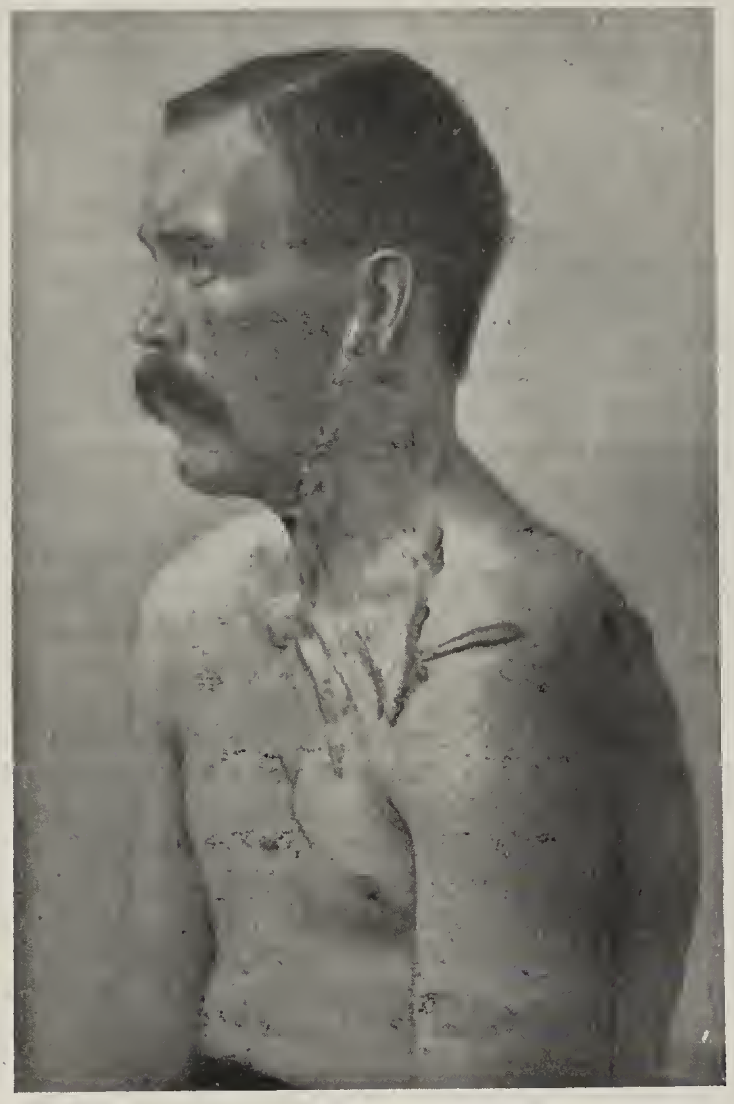
August 6th.—Patient has been vomiting for two days. Received ten grains of calomel night before last, and is now taking a mixture of hydrochloric acid and pepsin. It appears that the patient has a very susceptible stomach, vomiting very easily. It is also alleged that she has been intemperate. On this date the thiosinamine was omitted. There is already some improvement in the mobility of the right arm, as the patient can raise her hand about half-way to her head. August 10th, 15th, 20th, received an injection of twenty minims. August 22d, most of the injection lost. August 30th, received an injection of fifteen minims. Patient can now raise her hand and put it on the top of her head; still complains of nausea and vomiting. September 3d and 8th, received an injection of twenty minims. As she can now, after eleven injections, use her right hand and arm nearly or quite as freely as her left, she has asked for her discharge from the hospital, and gone to work as a domestic. She has been heard from occasionally since leaving the hospital, and is reported to be able to use her arm satisfactorily. I should have stated that there was not much alteration in the appearance of the scars. They were probably somewhat paler in color, and rather smaller in area. But to the touch they were much softer than when treatment began. They even began to feel like ordinary tissue. The nausea and vomiting in this case was surely aggravated, if not entirely caused, by the thiosinamine. The woman's general health certainly did not deteriorate in the least, but rather improved under the treatment.

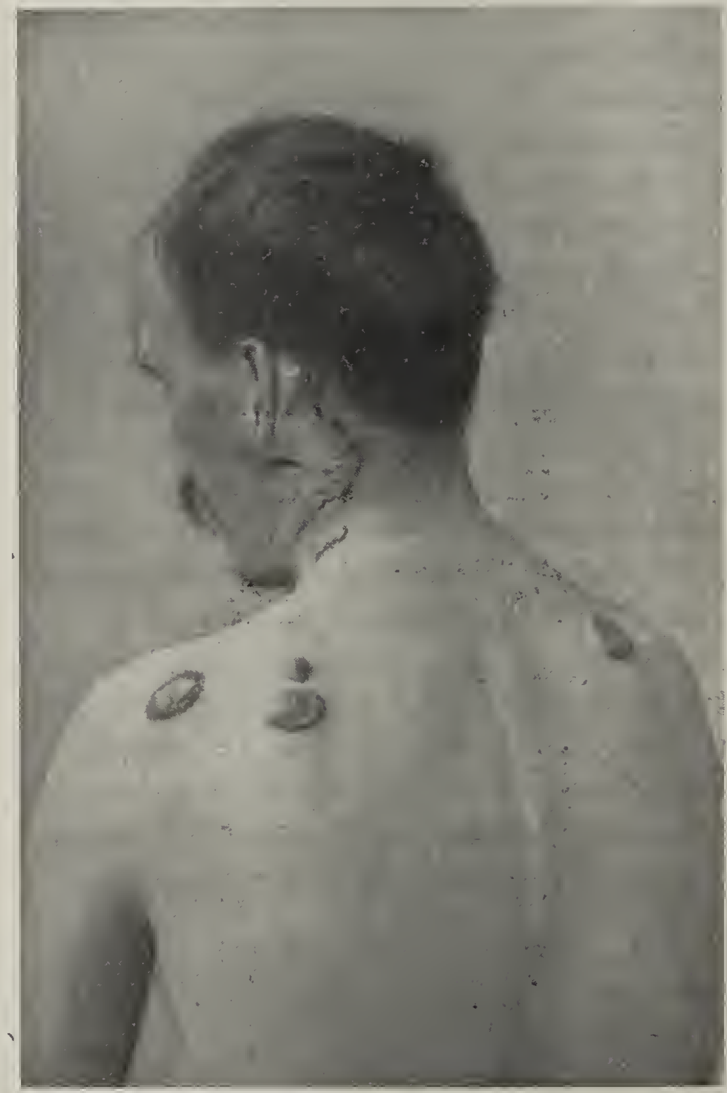
Note to Case I.—February 28, 1897. This patient has consulted me since this paper was written on account of pain in using the right arm. On inspection, I observed a superficial ulcer, of the size of a dime, at about the centre of the band of cicatricial tissue already noted, which occupies the lower margin of the anterior wall of the right axilla. This is just in the position where the arm size of the dress would rub against the scar when the arm is moved. On the 21st of February she received an injection of twenty minims of the ten-per-cent. solution of thiosinamine. On the 24th she presented herself again. The ulcer had already scabbed over and was less painful, and she reported a freer use of her arm, and an improvement in her general condition.

On the 28th she reports that her general health is better, and this statement is borne out by her improved appearance and by her employer, who comes to my office and expresses his appreciation of the benefit which the treatment has conferred upon his servant.

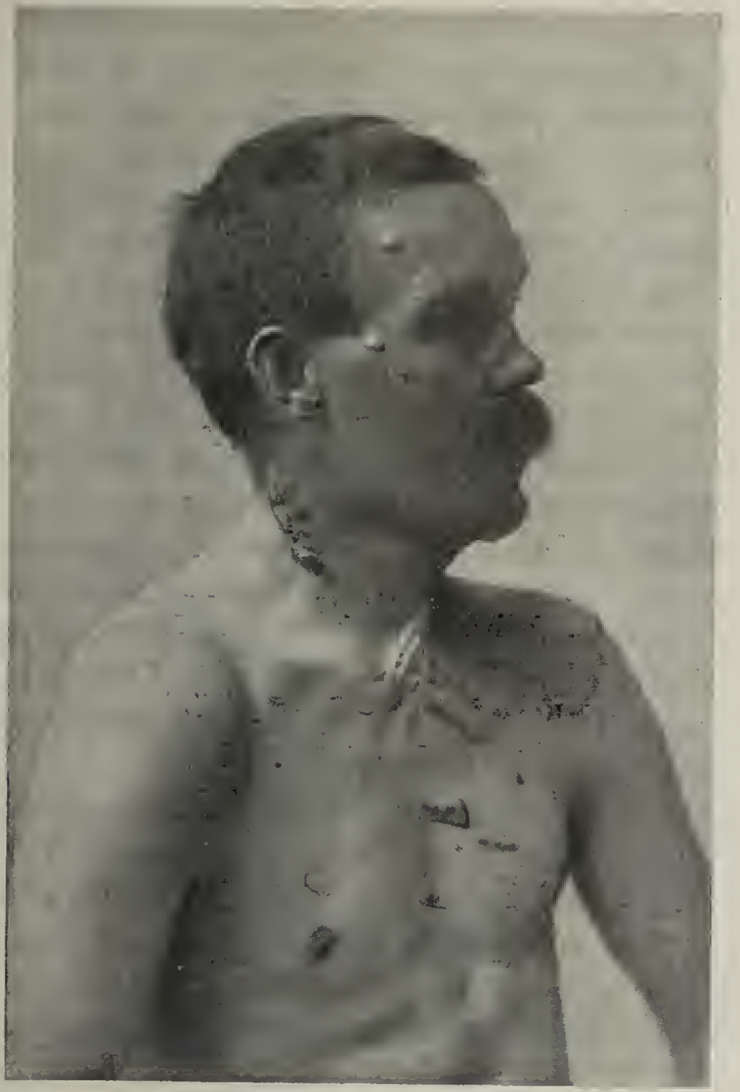
The scab over the little ulcer is drying up and getting ready to fall off, and the patient has freer use of her arm and feels much encouraged, as she had feared that her arm would become useless again and that she would be no longer able to earn her living.

CASE II. *Multiple Keloids.*—M. K., aged thirty-eight years, miner, born in Ireland, residence in Little Falls, N. J., admitted to Mountainside Hospital July 20, 1896. Denies syphilis and all sickness since he can remember, except the keloids, which he has had twelve or thirteen years. He is a fairly well nourished man, of medium size and good muscular development; his mental equipment about that of the average of his class. He says that the first keloid was not caused by an injury, that it simply grew. I could not satisfy myself from his account whether the first growth was an abscess or not; but he says that he did have an abscess on the left side of the neck which was opened by a surgeon, and subsequently one came on the right side of the neck, which burst of itself, and left a peculiar cauliflowerlike scar. The large growth on the left side, he says, was removed twice completely (in June, 1893, and in March, 1894), only to grow again in two or three months, and become larger. He denies that these growths have ever caused any pain. Besides the large growth which you will see in photographs 1 and 2, there were eighteen smaller ones. The large one, as you will see, occupied all of the right side of the neck, the right supraclavicular and infraclavicular regions, extended to the point of the shoulder and nearly imbedded the left ear. Its lower extremity was at the third rib in front. The smaller growths, except that on the right side of his neck, which you can see in Fig. 3, and which was about as large as two of my fingers, varied in size from that of a fig to that of a buckshot. His occupation, that of a miner, had rendered him liable to many abrasions. He did not know that these growths had any of them been caused by scars, yet they probably were all of traumatic origin. He had on the back of his head one, and on his face two scars, in which no keloid growth was visible to the naked eye; also one near the occiput, one on the point of his chin, and one at the parting of his hair. In a small tattooed figure on his left forearm the keloid tissue was beginning to grow. About four inches below the left ear, near the centre of the large keloid, was a broken-down ulcerated patch about as large as a fifty-cent piece. Patient says that these ulcerated patches occur quite frequently, and get well after a while. He says that the growths begin like a small pea, gradually grow and swell up, and contain bloody water. He says that the muscles of his neck were cut once to prevent wryneck, and that keloids appeared in the scar. This patient received in all twenty-one injections, and then left the hospital. After nine injections he objected so to the pain that I was obliged to inject ten minims of a four-per-cent. solution of cocaine before injecting the thiosinamine. After using the cocaine the pain was bearable. When he left the hospital, on the 22d of October, his general condition was excellent. He was stout and ruddy, and doubtless well able to work. All of the keloids were softer to the touch, and had diminished somewhat in size. Every one who had watched the case acknowledged that there had been marked local and general improvement. While, of course, the improvement in his general condition may have been due to his sojourn in the hospital, with the regularity of life and abstinence from dissipation, I feel satisfied that the keloids were also improved by the thiosinamine; and while I regret that I can not report more conclusive results in this case, I shall not hesitate to adopt the treatment in the next keloid which falls under my care. The case, you must acknowledge, is a very advanced one. The man has evidently the "keloid diathesis," in which, heretofore, no treatment whatever has availed. In fact, any interference has, as a rule,





made such cases worse than they were before, so that any treatment, no matter how tedious, which promises any benefit, no matter how gradual, is not only justifiable, but is, with our present knowledge, demanded in keloid. It must be remembered that in this case there were no constitutional effects whatever noted from the injections. The man could just as well as not have attended to his business, if he had any to attend to. His statement that he could not work any longer at his vocation, that of mining, I look upon with a good deal of suspicion. I would say, in closing, that one of the symptoms which Dr. Tousey calls to our notice, that of marked increase of the urinary secretion, was not noted in this case, although I had the man measure his water for several days after treatment began; nor was there, so far as I could learn, any febrile movement after the injections. These were made with a sterile needle and other antiseptic precautions, and no abscesses or other inconveniences than an occasional black and blue spot appeared.



NOTE TO CASE II.—After the injections all the keloid material near the puncture swelled out, became hard and turgid, and of a purplish color. This turgescence was much greater than the amount of fluid injected would account for. It was also noted that the hypodermic syringe which had been used for these injections began to leak from the absorption of the leather washers, a phenomenon also noted by Dr. Tousey (see *New York Medical Journal*, May 2, 1896).

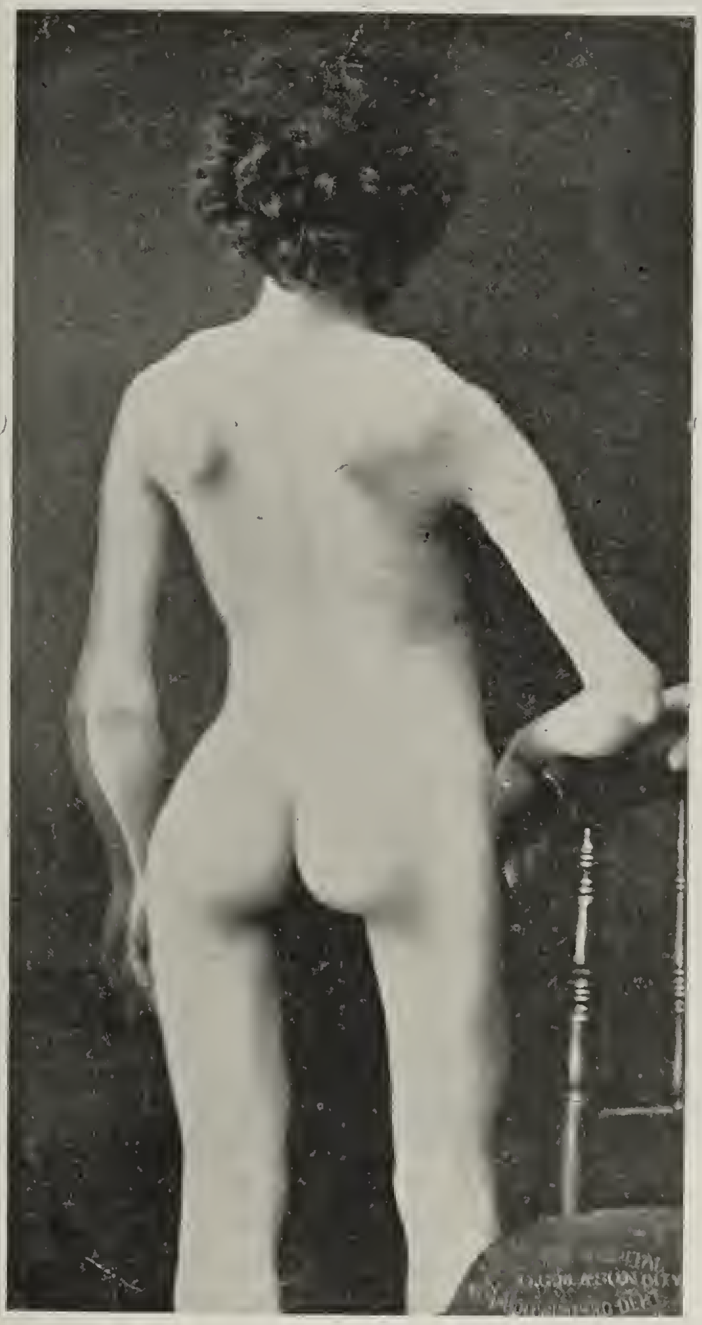
Potassium Iodide in the Treatment of Cholelithiasis.—Dr. T. Dunin (*Therapeutische Wochenschrift*, 1896, No. 29; *Centralblatt für innere Medicin*, February 6, 1897) speaks of the mitigating action of potassium iodide in cases of cholelithiasis, especially those characterized by frequent attacks of moderate severity, reducing the frequency with which narcotics have to be resorted to. He gives it in doses of from forty-five to sixty grains to be taken twice a day for four or five weeks, after which a course at Karlsbad should be taken.

PROGRESSIVE MUSCULAR ATROPHY IN THE YOUNG.*

By WILLIAM L. STOWELL, M. D.

THE patient whose photographs I present this evening has the following history:

Mary W. is thirteen years old, the eighth of nine children. Seven are girls, two are boys. None of these have any symptoms like hers. There is a large family of uncles on each side, one of whom had eleven children, and another uncle fifteen, but no disease of the muscular system appeared among them. The only neurotic case known was that of a paternal uncle who was melancholic and shot himself. The patient was a plump, rosy child, the prettiest of the family until she had diphtheria when five or six years old. There were other cases in the family at the time, but Mary was not considered very sick. A month after this attack her mouth began to pout and her facial expression to change. She gradually became thinner over the entire body, especially the shoulders and arms. At the age of eight she could not raise her arms to button the back of her dress. She stumbled very easily, which caused her many falls. At one time she fell from the fire escape one flight, but did



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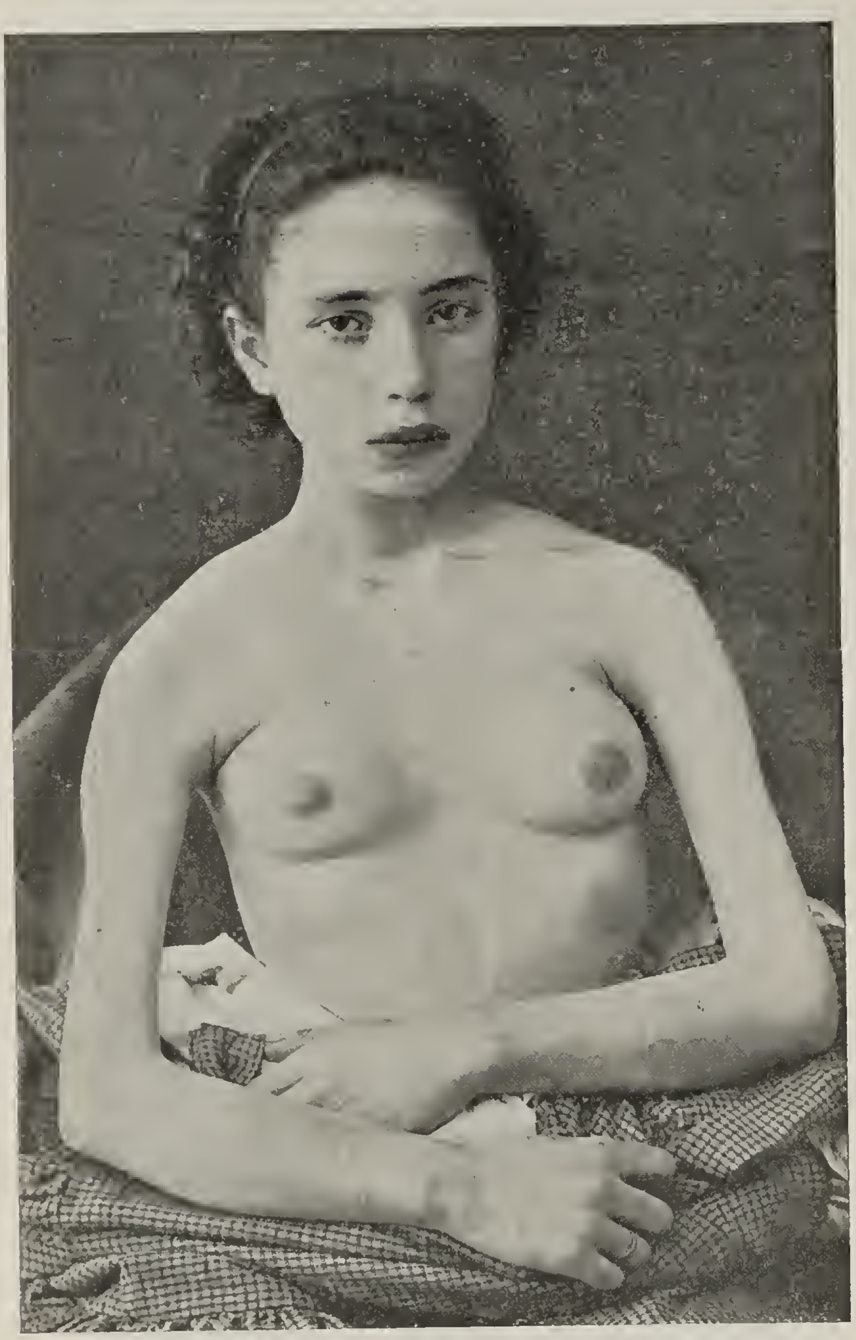
* Read before the Society of the Alumni of the City (Charity) Hospital, November 11, 1896.

not seem hurt thereby, though the weakness of the back became more pronounced soon afterward.

When between eleven and twelve years of age she was assaulted by a man in the house where she lived. After the rape it was again thought that she lost strength rapidly. Since May, 1895, the patient has been at Randall's Island, where I have watched her progress whenever on duty.

The orbicularis oris and orbicularis palpebrarum first failed, and hence the drooping lower eyelids and relaxed "tapir mouth." All lines of expression are lost. She can not whistle or close the eyes very tight. The buccinator and zygomatic muscles are also wasted. All the shoulder muscles are atrophied; the trapezius, rhomboids, minor and major, the supraspinati and infraspinati, the pectoralis major and pectoralic minor. The latissimus dorsi and serratus magnus are so atrophied that there is no support for the scapula, so that the weight of the arm rotates it and throws the inferior angle up to the vertebra prominens. All of the spinal extensors are affected, leaving the back unsupported. The weight of the head and shoulders, therefore, exaggerates the forward lumbar curve, and the upper part of the body is thrown backward to maintain equilibrium. The thighs and legs are somewhat implicated, and the characteristic waddling gait exists.



The history of progressive muscular atrophy properly begins with an account of eleven cases by Aran in 1850. Atrophy of muscles with paralysis had been observed even by Hippocrates, but systematic description commenced in the middle of our century. In 1853 and 1856 Cruvielhier published accounts of autopsies showing atrophy of spinal cord. He had lectured upon the disease for some years before. In 1854 Duchenne described the disease clearly. In 1868 Duchenne described thirteen cases that he had observed with pseudohypertrophic paralysis, and added a study of the fifteen cases previously published. Numerous cases have since been reported, but no advance made in knowledge of the disease. In 1873 Friedreich wrote voluminously, and sought to prove that the disease was primarily muscular. In 1879 Erb and Schultze described a case of involvement of the erector spinæ throughout, with all shoulder and arm muscles, also the glutæi and the flexors of the leg on the thigh (*Arch. f. Psychiat.*, Bd. ix, 1879, p. 369). From this time on we hear of Erb's juvenile form of muscular atrophy as though it were an entity. In 1885 Landouzy and Déjérine described a case like the above, but beginning in the face—facio-scapulo-humeral type. In 1886 Charcot and Marié reported the primary changes in the leg—peroneal type. In the same year, Tooth, of England, independently reported the same type of case.

Clinical History.—The majority of cases in adults begin in the upper extremity. Forty-two of Hammond's fifty-two began thus, nineteen of them in the thumb; four appeared first in the trunk. In children from two to ten years old the lower extremities, or chest and shoulders, suffer first. The younger the child the more likelihood of the leg muscles being affected and undergoing fatty degeneration at the same time the muscle fibres atrophy. This constitutes pseudomuscular hypertrophy, and is considered an independent disease by many authors. At all events, most authors consider that this form is primarily a perverted nutrition of the muscle. Charcot speaks of the tendency of the atrophic muscles to become lipomatous, but seemed not to separate the two forms. "Erb concludes that these dystrophies are forms of tropho-neurosis which may be the result of functional disturbance of trophic centres; and that such disturbance may be either primary or secondary to spinal lesions." (Sachs, *Nervous Diseases of Children*, 1895.) Sachs has seen the same case present atrophy of shoulder girdle (Erb's type), then have the face involved (Landouzy and Déjérine type), and also undergo fatty degeneration (pseudo-hypertrophic form). Westphal also published a case in which the face was affected in typical pseudohypertrophy. The outset of muscular atrophy is gradual, and in groups of muscles or single muscles. The degree of weakness is in proportion to the number of waste fibres—the electrical reaction persists and there is no reaction of degeneration. The degeneration is fibrillar, not *en masse* as in infantile poliomyelitis. The changes are usually symmetrical, corresponding pairs of muscles being affected on each side of the body. When the face is first affected the weak orbicularis oris and zygomatic muscles relax and cause the lips to protrude, giving a mouth like that of a tapir. The nasolabial line is lost and the face has a masklike smoothness. The patient is unable to whistle, and if the orbicularis palpebrarum is involved, the eyes can not be tightly closed. When the shoulder and back muscles are chiefly atrophied the patient can not raise the hands above the head, can not lift heavy objects, and may be unable to hold the head up erect. As the back muscles waste the normal curves of the spine become exaggerated. The abdomen is protuberant, the patient rises from the sitting posture with difficulty. The gluteal muscles wither, and those of the thigh, so that the gait becomes waddling and labored.

The various groups of muscles affected in different cases, with the various findings on autopsy, have given rise to much confusion as to type and nomenclature. The chief lesion or the primary change may be in the brain, the spinal cord, the nerve, or in the muscle. The cause of degeneration may be heredity, cold, rheumatism, neuritis, fevers, diphtheria, etc. When but few muscles are involved, traumatism or excessive use in a special kind of labor has been given as cause. As Sachs says: "This confusion of types of disease and of symptoms need not cause surprise if we remark that the ganglion cells of the spinal cord, the peripheral veins, and the muscles constitute a physiological unit." Ross (*Diseases of the Nervous System,* second edition, 1883) relates a case of pseudo-hypertrophy of the muscles in which the spinal cord and sciatic nerve showed no changes. Such examples seem conclusive proof that there are sympathetic cases pure and simple. Erlenberg says that the cord and roots have been examined in forty-nine cases, in thirty-four of which there were positive changes. This array convinces us that spinal lesions predominate, if they are not the original ones. The changes observed are chronic inflammation of the gray substance of the cord; the anterior roots of the spinal nerves are atrophied, and there is a disappearance of a certain number of nerve tubes. The infantile and juvenile types lie between the purely spinal and purely muscular in origin, also intermediate as to age and in degree of wasting. All may partake of characteristics of any type.

Diagnosis.—The diagnosis is made from infantile paralysis or antero-poliomyelitis, by the gradual instead of sudden onset, and by disassociated muscles being attacked simultaneously. The weakness of the muscles with consequent inco-ordination has led to a hasty diagnosis of chorea, or the falls received may lead to a suspicion of *petit mal.* The case I have described was treated for both of these affections.

Prognosis.—The prognosis is bad. The duration may be five years or twenty. The muscles of respiration finally become involved. Intercurrent disease usually carries the patient off. Hammond says that he has seen the process of atrophy stayed in only three cases, and these were of single muscles.

Treatment.—Electricity, strychnine, arsenic, iron, cod-liver oil, massage, etc., all help, yet all fail. Gray recommends the galvanic current, five to ten milliampères, for five or ten minutes twice a week. My patient seems to feel stronger when taking arsenic.

A very complete bibliography of this subject may be found in the article by Stewart in Keating's *Cyclopædia of Diseases of Children,* in Hammond's *Diseases of the Nervous System,* and in Sachs's *Nervous Diseases of Children,* 1895. Ross, in *Diseases of the Nervous System,* 1883, gives references for all English cases to that date.

THE TREATMENT OF INGROWING AND INGROWN TOE NAILS.*

By JOHN L. ANDREWS, M. D.

By "ingrowing toe nail" we mean a condition in which one or both sides of the great toe nail seem to grow downward and press into the soft parts to an extent sufficient to cause pain on pressure, and more or less discomfort while walking. This condition is considered by some to be always due to a rolling upward of the soft parts over the side of the nail, rather than an actual deformity of the latter.

As a matter of fact we see both conditions, and it is important to distinguish between them before giving a prognosis or selecting a line of treatment.

Where the soft parts are primarily at fault we may promise our patient a permanent cure, without operation, if our directions are carefully followed. Sometimes it will be only necessary to order a proper shoe. This shoe should have a low, broad heel, to prevent a wedging forward of the foot while walking. The inner side should be straight, to prevent pressure on the corresponding side of the nail. The toe should be sufficiently broad and extend far enough beyond the end of the foot to prevent pressure on the outer side from above and in front. If this is not sufficient, pack a small amount of cotton under the edge of the nail to protect the soft parts, and apply a strip of rubber adhesive plaster diagonally around the toe, in such a manner that the soft parts shall be drawn away from the nail without direct pressure over the latter. For this purpose a semilunar-shaped piece of plaster is often better than a straight strip. It should be applied with the convexity forward, one horn beginning just behind the nail on the affected side. This will allow the belly to catch the offending soft parts, while the rest of the piece is carried around the plantar surface of the toe and over the dorsum, crossing the first end. This dressing should be changed every three or four days.

In the first class, where the nail is really deformed, this plan is of very much less value. But many cases will be held in abeyance if we attend to the shoe, apply a cotton protection under the edge of the nail, encourage it to grow out beyond the soft parts, and keep them clean. However, this will sometimes fail, and the nail will become really ingrown. Neglected cases of both varieties almost invariably reach this stage, and this explains why, in dispensary practice, we nearly always see the latter variety.

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* Read before the Society of the Alumni of the City (Charity) Hospital, December 9, 1896.

Here there is always more or less hyperplasia of the soft parts, which are rolled up over the side of the nail in amount usually proportionate to the length of time the trouble has existed and the amount of irritation present. Next to the nail there is a mass of granulation, discharging more or less pus. In nearly all these cases our treatment must be operative if we effect a cure, and in all of them it will be found the most humane procedure.

A modification of the method devised by Anger seems to fulfill the indications more perfectly than any other. He removes a wedge-shaped piece, including the offending side of the nail, all of the granulation tissue, and more or less of the hyperplastic soft parts. This leaves a flap with which to cover the raw surface. Anger secured the flap with adhesive plaster, put the patients to bed for a week, and did not let them walk for ten or twelve days. By the method about to be described the patients walk immediately, do not go to bed, and are generally discharged, cured, in from ten to fourteen days.

The success and comfort of the operation depend almost entirely upon little points of technique, and I trust you will bear with me if they are given somewhat in detail.

The toes and foot are first scrubbed with soap and water, followed by a solution of bichloride of mercury (1 to 1,000). For anæsthesia, ten to fifteen minims of a two-per-cent. solution of cocaine hydrochloride is sufficient if distributed in the following manner: Introduce the hypodermic needle from before backward, just under the part of the nail to be removed; as soon as the skin is pierced inject a drop or two, and wait a moment before pushing it further; repeat the process until the root of the nail is reached. Withdraw the needle now, and, beginning near the primary puncture, distribute a few drops in the skin and soft parts along the outer side of the nail, nearly as far backward as the first joint. In this way the only pain felt is while the primary puncture is being made, and even that may be done away with by spraying with ethyl chloride or ether.

Next wind a small rubber tube around the base of the toe, to prevent blood from interfering with our work. Before making an incision swab the whole granular area thoroughly with pure carbolic acid, working it well down under the edge of the nail. Failure to do this will often cause infection and delayed union.

The first incision begins anteriorly somewhat beyond the edge of the nail, and is carried directly backward (separating a sufficient amount of the side of the latter) to a point about a fourth of an inch behind the true matrix. This is deepened through the underlying soft parts, well down by the side of the phalanx.

The second incision begins anteriorly at the same point as the first, and curves outward and backward to join the posterior end of the primary incision. This is deepened through the soft parts around the outside of the nail until we reach the lowest part of the first incision.

Remove the wedge thus set free and search the posterior part of the wound carefully, so that no part of the corner of the nail or matrix shall be left. If we leave a piece of nail, immediate trouble will ensue; if only the matrix is left, another ingrowing toe nail will make its appearance in a few weeks.

If properly fashioned, the flap which we have made will fit the opposite raw surface perfectly, and should be secured by one or two catgut sutures in front of the nail and the same number behind. Before removing the rubber band apply a moderately thick pad of gauze over the flap and bind it tightly to the toe with a few turns of gauze bandage.

Now remove the rubber tube and complete the dressing.

The patients walk home, and although there is often some pain the first night it does not last longer, and they keep about with little discomfort. The dressing should not be changed in less than a week, unless there is some indication, and at the end of ten days or two weeks the cure will usually be complete.

The "Cotting" operation has, perhaps, been more frequently used in this class of cases than any other, and it has two strong points: It is very easy to do, and the ultimate results are nearly always good. In point of time it suffers in comparison, as the healing process requires from three to ten weeks. Another objection to it is the often painful process of changing the dressings every two or three days.

The second class of ingrown toe nails, fortunately rare, will take but little of our time. Here, the suppurative process has existed for a long time, and we have on either side and in front extensive hyperplasia, sometimes enough to almost bury the nail from sight. The nail is also lifted more or less from its bed, sometimes nearly as far back as the true matrix. The suffering is exquisite, and it is often impossible to wear any kind of a shoe.

A flap operation is here out of the question; the proximity of a suppurating surface which we must leave will defeat almost any attempt at primary union that we may make. Instead, we should pare off the hypertrophied parts on either side as in the "Cotting" operation. In front the part should also be trimmed down to the level of the bed of the nail.

In dealing with the nail itself we should be guided by the conditions present. If it is loosened nearly to the matrix, it would be better to pull it out and pack the socket with gauze; if the latter precaution is not taken the new nail will find contracted quarters when it comes out. Where the anterior and lateral parts of the nail are separated for only a moderate distance the free part should be trimmed off to prevent the collection of pus. In these cases the healing process usually requires from four to twelve weeks.

307 East Eighty-sixth Street.

MODERN METHOD OF TREATMENT OF DISEASES OF THE INTESTINES.

By FENTON B. TURCK, M. D.,
CHICAGO.

(*Concluded from page 357.*)

Use of the Nebulizer with Double Tube.—This apparatus was first described and shown before the American Medical Association, May, 1895, in which attention was called to the use of nebulized oil of cloves and cinnamon and other oils for the treatment of the walls of the stomach. The nebulized oil of cloves passes down one side of the double tube, in the form of a cloud, into the cavity of the stomach. The entire walls are thus coated, and as the stomach becomes distended by the air introduced the contraction forces the cloud out through the other side of the double tube. I have discovered that the introduction of air with the nebulized oil of cloves and the resulting contraction forcing the air out of the stomach produces a pneumatic gymnastic, giving strength and tone to the weakened muscles of the stomach.

I use this method of treatment in diseases of the colon, especially when it is dilated, with a lack of peristaltic movement. I also use this for diagnostic purposes in both the stomach and colon, as the degree of distensibility and expulsive force can be readily determined. The double tube is passed through the rectum into the sigmoid, the nebulized oil of cloves and cinnamon passes upward, and as the colon becomes distended the air forced into the colon carries with it a cloud of essential oils reaching the cæcum. The cloud of oils forms a thin coating on the mucous membrane, and this thin coating remains for a long period of time. This I have proved by the experiment of forcing the cloud into the rectum of a dog. Upon opening the abdomen and examining the walls of the gut for a considerable distance, the odor of the oils introduced was perceptible. In cases of pleural empyema I have introduced the nebulized oil of cloves into the pleural cavity and detected the aromatic odor of the oils in the pus discharged on the following day. I have before referred to experiments made in moist chambers. The following experiment illustrates the value of the nebulized oil of cloves and cinnamon in preventing or retarding the development of micro-organisms. The mucous membrane of the stomach of a pig was dissected from the muscular coat and stretched upon glass plates placed in a moist chamber. The mucous membrane was sterilized in the usual way, as I have before reported in my methods of bacteriological studies of the stomach and intestines. A line or stroke culture was made at one side of the mucous membrane. A mixed culture (colon bacilli and staphylococci) was formed on the line, and when the colonies had developed the nebulized oil of cloves and cinnamon was allowed to play into the chamber for five minutes. Another line of the same culture was inoculated parallel to the first and the moist chamber placed in the incubator. On the second line no colonies made their appearance. The colonies on the first line were not destroyed. This experiment I repeated, which seemed to prove that while the nebulized oil of cloves and cinnamon introduced in this manner did not destroy the colonies already formed on the first line, it prevented new colonization of these micro-organisms. Besides retarding or preventing the development of micro-organisms upon the wall of the mucous membrane the essential oils named are vasomotor stimulants. This is illustrated by a simple experiment. If a cloud of pure oil of cloves and cinnamon is allowed to play on the end of the tongue it will be seen that the papillæ soon become injected and of a bright-red color, simulating in appearance the so-called "strawberry" tongue. These oils are also powerful analgetics, as the tongue in this experiment loses, for the time being, its sensitiveness to pain. For their antiseptic, analgetic, and vasomotor stimulating effects they have long been empirically used for toothache.

As I before intimated, it is not alone for the local effect upon the mucous membrane that this double-tube nebulizer is so valuable, but its effect in the colon, as well as the stomach, is that of a pneumatic exerciser. As the air with the cloud of oils passes through one side of the double tube, partially distending the colon, the pressure of the contracting organs forces the air out through the other side of the double tube. In cases where there is a marked distensibility, where the colon lacks resistance, the muscles soon gain tone or strength under this method of alternating expansion and contraction, a compensatory hypertrophy results, and the normal peristaltic movements are restored. Thus it will be seen these oils act as antiseptic agents and vasomotor stimulants, overcoming the congestion found in these cases, and, in combination with the pneumatic gymnastics, providing a simple and effective method of treatment of the colon.

In cases of membranous colitis, atony of the colon, dilatation of the sigmoid, with symptoms of constipation, the gyromele has been found to be of great value. The instrument was described and shown by me at the International Medical Congress, Rome, 1894, and was first used in gastric diseases in the treatment of inflammation (chronic) with symptoms of myasthenia (muscle weakness). A sponge attached to the end of a cable is passed into the organ through the rubber tube, at the end of which is an apparatus for the purpose of revolving the sponge.

Method of Use.—The sponge is passed through the rectum up into the sigmoid and rapid revolutions are produced. In some cases I have been able to pass through the sigmoid into the colon, which was demonstrated by the palpation of the revolving sponge upon the abdominal wall.

Many attempts have been made to pass the sigmoid flexure up into the descending colon. When a stiff sound is used there is great danger of puncturing the sigmoid as the sound pushes against the curvature, forming a pocket. A flexible tube, when pushed onward, simply curves upon itself and rolls up within the rectum or the sigmoid. A stiff tube, curved in the shape of the sigmoid flexure, has also been tried. The curve has been made to correspond with the curve of the sigmoid and thus pass around and enter the colon. This also fails, as the curve of the sigmoid varies, and the meso-sigmoid varies in length, giving great mobility to the sigmoid flexure. Kelly's long straight speculum has been used with some success, but it is difficult to determine whether the curvature of the sigmoid has not been pouched and pushed upward instead of entering the descending colon. Where there is an elongated meso-sigmoid the flexure can be pushed upward as high as the splenic flexure of the colon. This is very deceptive.

I have pushed the Kelly speculum in women under anæsthesia, and it seemed as if it was at or near the splenic flexure. I introduced the gyromele within the speculum and withdrew the speculum over the gyromele, leaving the gyromele in its place. By producing revolutions of the cable the exact location of the sponge could be felt upon the abdominal wall. In each case, when the speculum was removed, the sigmoid would return to its position and carry down with it the flexible cable and sponge of the gyromele. It seems that the flexure of the sigmoid had been pushed upon, there being an elongated meso-sigmoid, and the sigmoid, which is also very distensible, was carried readily upward by the speculum.

As the flexible cable of the gyromele has less resistance than the pouching sigmoid the cable will curve upon itself, and palpation of the abdominal wall will show at once that the sigmoid has not been passed. The resistance felt in attempting to pass with the gyromele also aids in determining whether the cable has passed or not.

As the revolving sponge seeks the point of least resistance it sometimes finds a curve of the flexure and glides up and around through the curvature into the descending colon. This can not be done by simply pushing up the flexible cable, as this would act in the same manner as the flexible rectal tube does. It is a matter of chance that the revolving sponge in its rapid revolutions insinuates itself, so to speak, through the narrow entrance leading from the sigmoid into the descending colon.

The principal value of the use of the gyromele in the colon is: (1) Removal of adherent material, such as scybalæ. It is effectual in membranous colitis used with liquid soap. Liquid soap helps to loosen the gluelike substances. The agitation caused by the rotary movement, together with the effect of winding off the adherent material from the walls, cleanses the surface. The loose material can then be easily removed by the use of the double-tube needle douche used with the pneumatic-force irrigator.

(2) The use of the gyromele in the colon has a similar mechanical massage effect as in the treatment of stomach diseases. This is especially valuable in dilatation with myasthenia or "muscle weakness." The vibratory effect of the revolving sponge and cable shows itself in increasing peristaltic movements of the intestines. The vibratory effect can be felt upon the abdominal wall, and in thin subjects the vibratory waves can be readily observed. Since vibratory movements have been shown to have a marked effect upon the circulation, stimulating the dormant muscle cells into activity and thus aiding cellular nutrition, this treatment has been recognized as a method of considerable value. It is especially valuable in dilatation and atony of the sigmoid.

(3) When it is desired to apply medicaments by topical application they can be injected through an opening made for that purpose at the upper end of the gyromele. Antiseptics, astringents, or medicaments may be used in any menstruum, thick or thin, as deemed best.

(4) The gyromele is also used in the application of electrical treatment. The moist sponge acts as an electrode. I have used electrical treatment by introducing one gyromele into the stomach and another into the colon, using intra-electrization with the faradaic or galvanic and also the sinusoidal current, as the latter is alleged to produce painless contractions.

There is much yet to be learned in the use of electricity. The principal effect of faradization seems to be the mechanical vibratory action on the tissue. Since the revolving sponge also produces marked vibrations, I have not yet decided whether the good effects are increased by the use of electricity. Electricity, used in the ordinary way in the colon, has not in my hands proved of much value. Neither the stomach nor the colon is contracted by the use of faradization; only the voluntary muscles show contraction. This is easily demonstrated by experiments on animals, by introducing an electrode into the stomach and another into the colon. After making an opening through the abdominal wall for observation, I have not been able to see any contractions of the viscera even when as high as thirty cells have been thrown into the circuit. The voluntary muscle would show contraction, but not the muscles of the stomach or intestines.

I have used in this experiment the faradaic, galvanic, and sinusoidal currents, both by internal, external, and combined electrization; neither shows any evidence of producing vibration or contractions of the viscera.

When all has been done by way of local treatment and still the patient does not recover, we are made to feel that man is not made of one or two organs, not simply a brain with branching connections, an alimentary tract with appendages set in a muscular and bony framework. There is a complex organization that escapes the most refined research even of the microscope and test tube, and requires not only local but "general treatment."

In general treatment, such as hydrotherapy and exercise, when good results are obtained we can not always give a scientific rationale.

The empirical fact remains that under the treatment the patient recovers. In attempting to explain we often fall into speculation, and when a theory has been proved unsound we lose interest in the empirical fact. It may be for this reason that the profession has but little knowledge of the technique of the use of water in treatment, especially practical knowledge of various forms of baths. And in exercises our knowledge is absolutely nothing as compared to that of other branches of therapeutics. A practical knowledge would give the physician the necessary advantages of exercise and baths for his own overworked body.

The bath that I will here describe has for its objects (1) the reduction of the congestion of viscera by causing a distribution of the blood over the surface of the body; (2) the elimination of toxines; (3) increase of the antitoxic and antiseptic effect of the blood (the defensive proteids), called alexins, derived from the leucocytes.

The Technique of the Bath.—The patient should be placed in a bathtub filled with water at the temperature of 100° F. The temperature is then rapidly raised to 110° F. The patient is instructed to lie quiet, as movements, like throwing the arms out of the water, will give a burning sensation by contrast of the air with the hot water. The temperature is increased to 112°, 114°, or 115° F., until the whole surface shows a crimson red, indicating arterial injection of the peripheral vessels. The temperature of the body will show a rise of 1° or 2° F. As soon as the surface assumes a scarlet hue, which will require ten or fifteen minutes, the patient is removed from the water and seated on a board placed across the bathtub, the feet resting upon the end of the tub; then the patient is rubbed over the entire surface with a block of ice weighing a pound or two. This is repeated four or five times. No shock is experienced even by delicate patients, as the high temperature of the water produces a modified anæsthesia of the skin. It acts as a powerful stimulant, without shock and without the enervating after-effects of hot-water baths. The temperature of the body is quickly reduced to normal by the ice massage.

If desired, cold douches can be used under pressure, but in most cases I do not recommend the use of douches for patients, as the above is sufficient. It is also unnecessary to resort to stimulation by friction of the skin, as by massage or rubbing with coarse towels after the bath. I find patients derive the best effects when the surface of the body is simply dried, as all the stimulation necessary is obtained from the bath. In most cases the patients do not desire to lie down, as the bath produces a sense of buoyancy and exhilaration which lasts for several hours, according to the case.

In cases of great vasomotor weakness, and in the functional disturbances known as "weak heart," lying down for an hour after the bath may be resorted to if found necessary. It reduces the congestion of the veins of the viscera, as I have found in experiments upon animals.

There is an increase in both the red corpuscles and leucocytes which is shown immediately after the bath, and indicates that certain anæmias are due to congestion rather than to reduction in the number of corpuscles.

I have also observed that after treatment every other day for two weeks there would be a permanent increase in the number of blood-corpuscles found in the peripheral circulation. The increased circulation not only causes oxidation and excretion of toxines, but also helps to increase the antitoxic effect of the blood. An increased number of leucocytes is set free into the general circulation. If the leucocytes furnish the alexins (the antitoxines of the blood), it may help to explain the rapid disappearance of the toxic symptoms after the bath treatment.

In many of these cases of intestinal diseases there is the evidence of poisoning that seems to originate from the gastro-intestinal tract. One of the most common symptoms is anæmia, with the characteristic changes in the blood-corpuscles. Another symptom from the effects of absorption of toxines is the depression or a peculiar nervous excitation that is described under the blanket diagnosis of neurasthenia.

As the bath stimulates excretion by the increased blood current, the skin, kidneys, and liver are bathed with arterial blood. I find the bath also of use for diagnostic purposes in determining the condition of the circulatory system. The promptness or delay of the response to the stimulation while in the bath, the condition of the patient after the bath, the character of the pulse, and other symptoms which may develop that were not shown before, are all useful as diagnostic aids. Then, again, the difference between true anæmia and the anæmia of the surface, due to the congestion of the blood within the viscera, may be mentioned.

Another method of general treatment is that by an extension exercise. Flexion movements, while of value in increasing the flow of arterial blood, do not have the marked effect of reducing congestion as do extension movements.

In our daily vocation most exercises are flexion movements, as walking and the general movements of the body. When tired and there is an accumulation of "fatigue stuffs," we involuntarily stretch out the arms and legs and yawn. These are extension movements that increase the venous flow of the blood, empty the lymphatics, and relieve the tired or lazy feeling. Various extension movements have been arranged that have for their purpose the increase of the afferent flow of blood. Extension movement also helps to empty the lymph spaces and increase the flow of lymph. This effect is heightened by adding resistance to the extension movements.

In order to provide abdominal or body movements combined with extension movements with resistance, I have devised a simple apparatus for these exercises, to which I have given the name the "H" exerciser, as the simple apparatus has the form of the letter H. Two elastic cords are stretched from the top of a doorway to the doorsill beneath, at a distance, parallel to each other, of two and a half or three feet. At about the height of the extended arm is placed a horizontal bar. This gives it the form of the letter H, hence the name.

The double cords on each side are so attached to the horizontal bar that it may slide up and down, but with friction resistance.

Technique of Method in using the "H" Exerciser.—The arms are extended forward, grasping a horizontal bar. The legs are extended sidewise. The exercise is to push forward as in turning a crank, something like working a grindstone. The arms and legs should not be flexed, but kept stiff, throwing the work upon the body. As the body comes forward and downward there is resistance in the elastic cords from above and below, and as a circle is made coming backward and upward there is resistance in the same way but in an opposite direction. The horizontal bar slides between the cords of resistance, which allows a complete circle to be made with resistance of the whole cycle of movements. In the return half, to complete the cycle of movements, the arms are not flexed, and therefore the body is thrown backward, and the abdominal muscles become stiffened in order to overcome the resistance and complete the cycle of movements. A period of rest occurs when the cycle is complete and gives sufficient time for the equalization of the circulation. At first five turns of cycle movements are made, then a period of rest for one or two minutes; then repeated until five turns or cycle movements have been completed. This is gradually increased each day until twenty-five cycles are made without a rest. The resistance is increased by the stretching of the vertical elastic cords, so that making the cords more "taut" increases the work. This is regulated by the instruction of the physician.

The effect of the exerciser increases the venous flow and empties the lymphatics, and assists in removing the toxines from the tissues. The difficulty is not so much to get the blood to the part as it is to cause it to flow from the parts. It is a vasomotor exercise especially belonging to the heart.

555 DEARBORN AVENUE.

THE
SUBCUTANEOUS INJECTION OF SALT SOLUTION.

By GEORGE S. BROWN, M. D.,
BIRMINGHAM, ALA.

It is not my purpose to cover the whole ground of transfusion and infusion, but simply to speak of the practical value of the subcutaneous injection of normal salt solution, with a little of my own experience as to the field in which it is of use. While it has been used a good deal in the last few years, I believe it has not been so generally adopted as its merit warrants, and certainly not in so wide a field as I believe it will soon be found applicable.

In the Johns Hopkins Hospital, in the practice of Dr. H. A. Kelly, it is a routine measure in the treatment of exhaustion, of surgical shock and hæmorrhage, and also in septic conditions.

The apparatus I have here, consisting of a bottle with a capacity of about eight hundred cubic centimetres, graduated from top to bottom in a way to show accurately the amount and rapidity of the injection, to the bottom of which is attached four or five feet of rubber tubing with an ordinary aspirating needle at the end, is the simple and convenient instrument they use. An ordinary fountain syringe will do as well. It is also of value at times to have at hand this silver cannula for injecting the solution directly into the vein in such desperate cases of hæmorrhage where the absorption of the fluid from the cellular tissue would be too slow. Since witnessing the great benefit of this measure in many cases in that institution, this apparatus, together with a bottle of the normal salt solution, has been a constant occupant of my surgical and obstetrical bags, as well as always being ready for use in my operating room.

The solution (0.6 per cent.) is kept in one-litre Florence flasks. After the fluid is filtered, the flask is stopped with non-absorbent cotton and then boiled on the gas stove. The temperature at the time of injection should range between 45° and 55° centigrade in the bottle, according to the size of the needle used. This variation is owing to the rapid cooling in the tube. It should not be higher than 40° C., or 104° F., when it enters the tissues. I have found that with a temperature of 55° C., or about 130° F., in the bottle it is not more than 104° as it flows out of the smallest size aspirating needle. It is well, however, to ascertain the exact temperature at the point of the needle to guard against having it either too hot or too cold. If it is too hot it might cause sloughing, and if too cold it will be absorbed too slowly. It is well in every case to first carefully cleanse the skin at the point of injection, but if the needle is clean there is little danger of an abscess even if this is not done. In something like a hundred injections of this kind, I have seen nothing worse than a slight tenderness for a few hours afterward.

In a woman as much as eight hundred cubic centimetres can be injected under each breast. The breast will stand erect and hard while the fluid is being injected, but within a minute after withdrawing the needle the breast will be soft, and within ten minutes the greater part of the fluid will have been absorbed. In men it is best to insert the needle wherever the most fat is to be found—loin, buttock, or axilla. When the tumor becomes hard and the skin stretched, it is well to compress the tube until some of the fluid has been absorbed. In this way eight hundred or one thousand cubic centimetres can be injected at one place, which is quite an item to a nervous patient.

This treatment is in common use by many surgeons in combating exhaustion and death in cases of acute anæmia from hæmorrhage, and in treating septic conditions, and my apology for this paper is that it may add a mite of influence in extending the use of it in these conditions, and also to urge my belief that there are many other conditions in which this absolutely harmless procedure may be used with the greatest benefit.

After seeing it used in Dr. Kelly's operating room in a large number of cases in which patients were suffering from the effects of surgical shock and hæmorrhage, with the almost uniform result of causing a weak and oftentimes almost imperceptible pulse to fall from 150, 160, or 170, to 120, 100, or to normal within an hour, it occurred to me that it ought to have a good effect in other conditions of exhaustion. The first case in which I used it was a case of pneumonia, which I will briefly relate:

T. G., aged thirty years—drunkard and opium smoker—was brought to our hospital one evening, cyanosed; temperature, 105°; respiration, 60, and delirious. In spite of all measures in the way of stimulants throughout the night, the next morning he was in collapse. This was the fourth day of the disease, and he was evidently dying at the crisis. He was unconscious, temperature subnormal, pulseless, face deeply cyanosed, respiration shallow and gasping. The needle was introduced in the thigh and before half a litre had been injected the pulse came back. Within an hour after injecting one litre and a half the color was good, the pulse 110 and of natural volume, he was conscious and rational, and his lung showed signs of clearing up.

While it is true that pneumonia patients often pass through as severe a crisis as this, I am sure that any one seeing this case would have said that this rapid reaction was due to the salt solution. Unfortunately, this very bad subject afterward had delirium tremens, and after the most faithful efforts salt failed to save him, and he died.

My second case was that of a six-months-old baby who was in collapse from an exhausting diarrhœa which began two weeks before as a cholera infantum. The nose, extremities, and breath were icy cold; eyes sunken, features pinched, unconscious. Temperature in rectum, 104°; no pulse at the wrist; heart beat above 180 to the minute. The child weighed probably ten pounds. Seven ounces of salt solution were injected under the skin of the buttock. Before the injection was finished, the pulse appeared at the wrist and could be counted, 170. This was at 7 P. M.; at 12, the child's face had filled out, the temperature was 101°, pulse 140 and strong. At nine next morning the pulse was 120, temperature 100°, and the child was conscious. The effect upon this child of the injection could be compared very aptly to watering a sickly, drooping, dried-up plant, only the child revived more quickly than the plant could possibly have done. This child improved, and seemed to digest its milk for several days, and was then taken to the country. Two weeks later I saw it again, but it was suffering from a most profound toxæmia due to the continued hot-weather intestinal troubles, and it died next day in convulsions. I used a like amount of salt solution at this second visit, but with no appreciable effect.

In a case of gunshot wound of the lung which I have recently had under treatment, I had the following experience: The ball entered the right side just over the liver, but ranging upward at so acute an angle as to miss the liver. It cut the eighth rib in two in the axillary line, and passed into the lung. The hæmorrhage was very severe, both from the external wound and from the bronchial tubes, and when I saw him three hours later, he was very weak from the loss of blood, almost pulseless. He was given a litre of salt solution, with the effect of bringing his pulse down to normal from 120 within two hours. After his wound had been dressed he was transported twenty miles to the hospital. For ten days he had no elevation of temperature, but was expectorating blood all the time. At the end of ten days, the external wound being closed, although suppurating at the surface, he had septic symptoms, which condition was confirmed by an examination of the blood, which showed a marked leucocytosis. In three days he was having a daily chill with a temperature of 104°. Under ether I cut down upon the bullet track and resected the ends of the broken rib, breaking up a well-organized clot in the pleural cavity. This let out several ounces of thick, odorless serum, a culture from which proved to be aseptic. A drainage-tube was introduced, as, of course, the blood clot and serum in the pleural cavity were sure to become septic. The septic fever continued and the ether caused nausea and vomiting for four days, and the patient rapidly lost ground. More salt solution was given him, with the immediate good effect of stopping the nausea and bringing down the pulse and temperature, although the septic condition continued. I was now satisfied that I had to deal with an abscess in the lung which was not draining and which I could not locate, but I was hopeful that by sustaining him with the injections it would rupture into the pleural cavity and drain through the external wound. Four days later this occurred during a fit of violent coughing, and a large quantity of offensive pus drained away. This became blocked up, and at the end of another week the septic symptoms were again pronounced. He was again etherized and the pleural cavity explored through the enlarged opening. Pus came away freely, and, as his condition was very bad, I did not take time to resect the rib as I ought to have done. The bad symptoms continued, but were held in abeyance by more salt solution. The lung abscess again opened up after three days, and his condition gradually improved for a few days. Again his temperature began to rise and I at once etherized him again, and resected three inches of the rib. During this operation I had an assistant give him the salt solution as soon as he was etherized. After this operation his pulse was good, he had little or no nausea from the ether, and his convalescence has been steady. The treatment up to this time had ranged over five weeks, and I am certain the result would have been different but for the sustaining effect of the salt solution.

In another case in which I removed two irregular-shaped stones from the calices of the kidney the hæmorrhage was alarming. The patient was very much debilitated from long-continued sepsis and suffering, and his pulse at the beginning was 130. It ran up to 170 during the operation and could hardly be felt at the wrist. After two litres of the solution had been injected, it came down to 120 and was of good volume, and convalescence was uninterrupted. In cases of this kind the solution should be thrown into the vein, as it acts much quicker, and because in such extreme anæmia from sudden hæmorrhage, the solution is liable not to be absorbed from the areolar tissue; and I had one such experience. A boy who had been shot through the abdomen was brought in with the abdominal cavity full of blood. At the moment, this tube for introducing the solution into the vein could not be found, and we trusted too much to the absorption of the blood from the subcutaneous tissue. He revived somewhat during the operation of resecting a portion of badly injured bowel, stopping the hæmorrhage from a mesenteric artery, and applying a Murphy button, but the fluid soon ceased to be absorbed and he died four hours later. I feel sure that he would have survived, for the time at least, if the solution had been introduced into the vein.

In two cases of railway injury—one in which a thigh was crushed high up, and in the other an arm and leg—the introduction of a litre of salt solution into the vein had no effect whatever on the collapse, and both patients died promptly without operation. In such cases the collapse was due more to the general shock to the nervous system than to loss of blood.

In the *Johns Hopkins Hospital Bulletin* of July, 1894, Dr. Kelly reports two cases, one of his own and one of Dr. Taylor, of London, of ante-partum hæmorrhage; both cases were in desperate straits and both were promptly resuscitated by the injection of salt solution into the radial artery.

The last case in which I used the subcutaneous injection was in that of a child of one year, who was apparently dying of extreme inanition, the result of five months of severe diarrhœa. It also was in collapse, cold, pulseless, and unconscious; the degree of emaciation was extreme, the coils of the bowel being easily seen through the abdominal wall. After the stimulating effects of ten ounces of salt solution, lard inunctions, a modified diet, and the advent of cooler weather, the child recovered.

I feel confident that from time to time in the near future we shall have encouraging reports of the use of hypodermoclysis in the treatment of many diseases in which it has not yet been used. It undoubtedly increases the number and activity of the leucocytes. By increasing the arterial pressure it also increases the action of the skin and kidneys. Increased leucocytosis and increased elimination are the conditions most to be desired in combating toxæmias. Reasoning from the ground of its diluent and eliminative effects, hypodermoclysis ought to give good results in the treatment of cases of typhoid fever. (Leucocytosis is never present in uncomplicated cases, so we would not expect it to play much part in the natural cure of the disease.) In those cases in which the active symptoms of the disease have disappeared and the patient is left in a prostrated condition, with a slight daily fever which he seems unable to throw off, it ought to be of the greatest value by its diluent and eliminating action. Indeed, all through the active stage of the disease it might be of benefit as a stimulant. By its diluent and eliminative action it might be of value in the treatment of acute rheumatism, and, indeed, in all that class of toxæmias which react so violently on the nervous system—*e. g.*, in the late stages of severe cases of diphtheria and scarlet fever it might not only save life, but might lessen the number of paralyses following these affections.

I should even be tempted to use it in large quantity in the very first days of acute anterior poliomyelitis or infantile paralysis, as there is hardly any doubt now that this disease is a severe toxæmia, acting directly on the nervous system, although the nature of the poison is still obscure. It ought also, for the same reason, to be a useful measure in the treatment of tetanus, in conjunction, of course, with the antitoxine and sedatives. These are merely suggestions, of course, and I regret that my personal experience with this measure does not yet include the treatment of any of the last-mentioned affections. I hope, however, that some whose line of practice brings more of these cases to their notice than comes to mine may be induced to supplement my experience with more valuable experiments of their own.

A CASE OF

GUNSHOT WOUND OF THE LIVER.

IMMEDIATE OPERATION. RECOVERY.

By W. J. MAYO, M. D.,

SURGEON TO ST. MARY'S HOSPITAL, ROCHESTER, MINN.

H. C., a lad, aged fourteen years, while hunting, October 3, 1896, was accidentally shot by a companion with a rifle at one foot distance, the bullet entering the body one inch below the ensiform cartilage and three fourths of an inch to the right of the median line. There was no wound of exit. The accident occurred some distance from the city at about 12 M.

He was brought to St. Mary's Hospital at 3 P. M. When admitted he was in a condition of shock; temperature subnormal; pulse, 118, and very feeble; surface cool. He complained of some pain in the abdomen, which was contracted and rigid. He was somewhat nauseated, and had vomited once after the accident, but without evidences of blood.

The urine was drawn and contained no blood. Measures were taken to relieve the shock, and the patient was at once prepared for operation. Ether was administered at 4 P. M., just four hours after the injury.

An incision was made from the tip of the ensiform cartilage to the umbilicus, freely opening the abdominal cavity. A lateral cut was then made to the right so as to include the wound of entrance. The bullet had cut half of its diameter into the edge of the right costal arch and entered the liver just at the inner edge of the suspensory ligament.

On the surface of the liver was found a bit of his flannel shirt, which had evidently been caught against the costal arch and cut out like a punch. From the hole in the liver dark blood was welling up, and the abdomen was filled with blood. The liver, as usual in children, was very large, extending downward nearly to the umbilicus. A probe passed directly backward six inches and was arrested by the posterior abdominal wall.

With a finger introduced under the gastrohepatic ligament through Winslow's foramen, search was made in the lesser cavity of the peritonæum for the probe, which was left in position for this purpose; it could not be felt. A piece of iodoform gauze was passed along the finger under the lesser omentum to drain this space and brought out at the lower angle of the incision. The wound in the liver was rapidly searched with a finger for foreign bodies and then packed deeply with iodoform gauze, bringing it to the surface in the track of the bullet; this at once checked the bleeding.

The abdomen was not irrigated, the effused blood being left for absorption. The abdominal incision was closed, except at the points of gauze drainage, without further search for the bullet. After vigorous stimulation the little patient rallied. The drains were removed in six days, and he left the hospital fully recovered in twenty days.

Eight weeks after the injury an X-ray photograph was taken by Dr. J. G. Cross, of Rochester, Minnesota, locating the bullet in the muscles of the back. As the bullet gives the boy no annoyance it will not be interfered with.

Therapeutical Notes.

Apiolin is described in the *Therapeutische Wochenschrift* for February 14th as a yellowish liquid obtained from the volatile oil of parsley by saponification and distillation. It is neutral in reaction and soluble in alcohol. According to the French physicians, it acts on the vascular system, causing congestion, and at the same time on the muscular tissue of the uterus. It is used as an emmenagogue and to regulate the menstrual flow. On account of its harsh smell and taste, it is best to order it in gelatin capsules each containing three grains. Two or three capsules may be taken daily, with the meals, beginning two or three days before the time for the flow to occur.

The Treatment of Sweating of the Feet.—Dr. R Adler, of Prague (*Prager medicinische Wochenschrift,* 1896, No. 39; *Centralblatt für innere Medicin,* February 20, 1897), employs powdered tartaric acid, and also painting with commercial formalin, with the result of forming in two or three days a dry crust. The effect lasts from two to three weeks.

Pills for Influenza.—The following formula is from the *Wiener medizinische Blätter* for February 18th:

℞	Quinine sulphate	45 grains;
	Powdered digitalis, Powdered squill, } each	15 "
	Extract of opium	4½ "
	Licorice juice, a sufficient quantity.	

M. Divide into thirty pills, of which four are to be taken daily.

Stramonium, Colchicum, and Guaiacum in the Treatment of Gout.—*Progrès médical* attributes the following formula to Gayle:

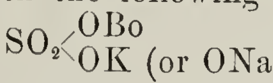
℞	Tincture of stramonium	4 parts;
	Tincture of colchicum seed	6 "
	Tincture of guaiacum	60 "

M. Dose, a teaspoonful, three times a day, in milk.

Unpleasant Effects of Trional.—Dr. F. Kaempffer (*Therapeutische Monatshefte,* February, 1897; *Therapeutische Wochenschrift,* February 21, 1897) relates the cases of four elderly persons suffering with cancer of the stomach or of the liver, with impaired nutrition, in whom fifteen grains of trional, instead of causing sleep, gave rise to a peculiar disturbance manifested by restlessness, anxiety, palpitation of the heart, and illusions, which lasted all night. In one of the cases a dose reduced to three quarters of a grain produced a moderately sound sleep for six or seven hours; in the others, however, there was no change from lowering the dose, and an increase of it resulted in severer disturbance.

Camphor as an Antigalactic.—At a recent meeting of the Société de médecine of Nancy (*Indépendance médicale,* March 3, 1897) Dr. Herrgott stated that in about thirty cases he had employed camphor internally, in doses of three grains three times a day, to bring about suppression of the milk. The treatment was continued for three days, and in almost every instance it diminished the secretion to a remarkable extent.

Borol.—In the *Therapeutische Wochenschrift* for February 28th the following formula is assigned to this compound:



$SO_2{<}^{OBo}_{OK\ (\text{or } ONa)}$.

It is said to occur in colorless, glasslike fragments, odorless and soluble in five parts of water. According to H. Jäger, borol is three times as strong an antiseptic as carbolic acid; according to Vogtenberger and Foehr, a two- or three-per-cent. solution promptly kills the *Staphylococcus pyogenes aureus,* the bacillus of anthrax, and the cholera vibrio. Vopelius and Golliner speak of borol as an excellent nonpoisonous antiseptic, one that is taken willingly by children as well as by adults. Thus far, it has been used internally in epidemic cerebro-spinal meningitis, croupous bronchitis, acute septicæmia, erysipelas, and phlegmons; internally and externally in erysipelas, psoriasis, frostbite, ozæna, and diphtheria; and topically in gonorrhœa, burns, and injuries. In diphtheria, the nose and throat are sprayed with a one- or two-per-cent. solution; the same solution is employed in gonorrhœa and in ozæna. Internally, a twenty-per-cent. solution is used, from ten to twenty drops five or six times a day for children, and from thirty to fifty drops for adults, diluted with water. As it coagulates milk, it should not be given to infants too soon after they have nursed.

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STEAMING THE UTERUS IN SEPTIC CONDITIONS FOLLOWING ABORTION, ETC.

SOME months ago we presented the substance of an article on this subject by Dr. Ludwig Pincus, of Dantsic. In the *Centralblatt für Gynäkologie* for February 20th that gentleman has a further communication on the matter. He reports the results in ten additional cases of sepsis following abortion. In five of them the fever disappeared speedily by crisis, in two lysis occurred, and in three there was no notable fever to begin with. The occurrence of lysis, he thinks, indicates infection of a moderate grade. In almost all the cases the odor ceased at once or became so slight as to be hardly noticeable. In one case the steaming had to be repeated on the third day, and then lysis set in. At the time of the appearance of the lochia, on the third or fourth day, he began the use of vaginal injections of sterilized physiological salt solution, and in one case he used injections of potassium permanganate.

The treatment he regards as still in the experimental stage, and he acknowledges that thus far he has employed it with the feeling that there was a certain amount of risk, especially of inoculating fresh wounds with infectious germs. But he adds that it seems to him a very plausible procedure for reducing the risk to the minimum, particularly in neglected cases, for it not only destroys the germs and covers fresh wounds with a protective coagulum, but induces energetic uterine contraction, whereby the traumatic surfaces are decidedly reduced in size, and involution, which generally means convalescence, is remarkably promoted. He thinks the treatment is especially suitable in cases of so-called habitual abortion, which so commonly depends on a diseased state of the endometrium that may be overcome by two minutes' steaming at 212° F., followed for six or eight days with applications of tincture of iodine.

Dr. Pincus makes it a *conditio sine qua non* that the steaming shall be employed only when there is no complication affecting the annexa, although "incipient inflammatory phenomena—but without suppuration—with irritation of the peritonæum" (quoting from Kahn) may be favorably affected by the steam. In the treatment of abortion he does not resort to active interference unless the indication of hæmorrhage, fœtor, or fever is present. Whatever remnants of the ovum there may be in the uterus he removes with the finger oftener than with the curette, and then irrigates the uterine cavity with an antiseptic solution, using Playfair's tube and repeating the irrigation daily for several days if necessary. In addition, he applies cold compresses or ice-bags to the abdomen, and always gives ergotine subcutaneously. He maintains that the steam treatment is a specific for septic abortion, and probably also for uncomplicated puerperal endometritis, but he closes with the qualifying remark, "*specifica non sunt, nisi in manu periti.*"

THE LEECH AS A DRUG.

THERE is an almost Munchausenish flavor to an article that appeared in the *Therapeutische Wochenschrift* for February 28th, but therapeutics has already marched far into the domain of the wonderful within the last few years, and our incredulity is well-nigh exhausted. The article deals with leech extract, a sterilized watery extract of the heads of medicinal leeches hardened in alcohol and then dried and powdered. Two cubic centimetres of this extract are said to contain the active constituents of an entire leech.

The writer refers to Haycraft as having ascertained that the oral secretion of the leech had the property of hindering coagulation of the blood, and mentions Dickinson's and Landois and Schultze's having subsequently found that the watery extract of the leech's head possessed a similar property. This peculiarity it manifests not only *in vitro*, but also in the living body. On the strength of this fact, Landois proposed to add the extract to blood to be used in transfusion, so as to do away with the necessity of defibrinating it.

As has since been proved by Sahli, says the writer, this anticoagulant action of leech extract, which is innocuous when given by intravenous injection, may prove effective in checking relapsing thrombosis and infarction, but the amount that would have to be used in the case of an adult human being would be from a hundred and fifty to two hundred cubic centimetres.

Bosc and Delezenne, the writer goes on to say, have lately made the interesting observation that blood rendered insusceptible of coagulation by the admixture of leech extract resists putrefaction for a long time, as long as a month. This, says the writer, can not be ascribed to any antiseptic action of the extract, for it is itself an excellent culture medium for a number of schizomycetous micro-organisms; so it must be assumed that it gives rise to a change in the blood. This is actually recognizable with the microscope; the white blood-corpuscles, for example, are seen to have been endowed with a higher vitality, greater mobility, and a better appetite than they possess in normal blood! As a consequence, not only are the leucocytes strengthened for their contest with the bacteria of putrefaction, but they are enabled also to confer on the blood absolute immunity to experimental infection.

If all that has been said in this article turns out to be true, the intravenous injection of leech extract may, we suppose, be expected to set up a state of hæmophilia in the subject—temporary perhaps, but decidedly objectionable, we should imagine.

AIROL IN THE TREATMENT OF LEPROSY.

In the *Wiener medizinische Blätter* for February 25th there is a report by Dr. Domenico Fornara, of Taggia, in Liguria, of a typical case of leprosy dating back to the year 1892. According to an examination of the patient by Professor Profeta, of the University of Genoa, the disease had already attacked the eyeball and the periosteum of the clavicle. After employing various measures of treatment to no purpose, Dr. Fornara tried airol, at first in the form of a ten-per-cent. ointment with vaseline, at the same time prescribing massage of the entire body. Having observed some benefit as the result, he proceeded to use direct injections into the suppurating cavities of a solution of five parts of airol in thirty-five of glycerin and ten of distilled water. The periosteal abscesses having been opened, they were treated with pure airol, and the above-mentioned ointment was penciled on to the eyes. At the same time tonics, such as iron, cinchona, and cod-liver oil, were given internally.

The benefit that followed a little more than two months of this treatment was so striking that Dr. Fornara considers it his duty to publish an account of the case, in order that others may test the treatment for the purpose of determining as soon as possible whether there has been found in airol a specific for this disease, hitherto so rebellious. In his case, the small nodules were dispersed and the large ones were reduced in size under the airol treatment. Broad, superficial deposits were converted into pustules colored yellow by the airol. Such pustules he opens with Potain's aspirator. The abscesses are healing, the ocular conjunctiva is regaining its normal appearance, and the loss of hair is beginning to be replaced by a fresh growth. The sensibility and suppleness of the skin are in course of restoration. More than all this, the patient's enjoyment of life and her good humor, which had wholly forsaken her, are returning; this Dr. Fornara ascribes to the systemic effect of the remedy, some of which is absorbed into the blood and diffused through the whole body.

After some of the injections he has been able to detect traces of iodine in the urine, and it is this fact that inclines him to think that the remedy is absorbed; of late, too, there has been observable a grayish coloration of the free edges of the gums, and he thinks this is due to the bismuth. On certain days when large amounts of airol were used, he observed some dejection of spirits, but not very decided, which suggested to him the action of gallic acid. Dr. Fornara hopes to show his patient, a woman, twenty-nine years old, at the leprosy congress that is to be held in Berlin next October, and he hopes that by that time her restoration to health will be complete. It is earnestly to be hoped that Dr. Fornara will not be found to have been over-sanguine, and it is to be expected that, on the strength of his preliminary report of this case, airol will be tried extensively in the treatment of leprosy.

MINOR PARAGRAPHS.

HOW THE CHINESE TRY TO TELL THE SEX OF THE FŒTUS IN UTERO.

A French military surgeon and attaché of the French embassy in China (*Archives de tocologie et de gynécologie*, 1895, No. 6; *Centralblatt für Gynäkologie*, February 27, 1897) tells how the Chinese try to settle the question of the sex of an unborn child. In addition to data which they deduce from the general appearance of the mother, the size and shape of her abdomen, the appearance of her breasts and face, etc., they depend on the child's movements. If it kicks or thrusts with the fist, it is a girl; a boy, on the other hand, although lively of motion, springing about, never kicks or strikes with the fist. If after the seventh month the child's right hand—how they distinguish it from the left hand or from a foot does not appear—moves on the mother's left side, it is a boy; if the reverse, a girl. Besides, they resort to complicated reckonings in which the mother's age, the time of conception, and the moon play important parts. If the last figures denoting the mother's age and that of the moon in which conception took place are both even or both odd, the child is a boy; if one is even and the other odd, it is a girl.

THE CHARAKA-SAMHITĀ.

We have recently received Part XVI of Pundit Avinash Chandra Kaviratna's English translation of this work, concluding Lesson III and containing Lessons IV and V. This careful and very meritorious translation is a valuable addition to our means of obtaining an insight into Oriental medical lore. The following passage sheds some light on the ethics taught in the work:

"Of diseased persons of the following kinds, even when the fit time for it comes, a draining out of faults, or administration of any other medicine, should not be attempted. They are—(1) one that is not disposed to remove the cause of censures directed to one's self, (2) one that is very poor, (3) one that has no attendants (nurses) to look after him, (4) one that is full of pretensions regarding his own skill as a physician, (5) one that is of a fierce temper, (6) one that is envious of other people, (7) one that is exceedingly addicted to unrighteous acts, (8) one that is exceedingly weak in strength, flesh, and blood, (9) one that is suffering under an incurable disease, and (10) one in whom the symptoms of the near approach of death have discovered themselves. By treating a patient of any of these kinds, the physician incurs both sin and infamy."

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 16, 1897 :

DISEASES.	Week ending Mar. 9.		Week ending Mar. 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	2	5	1
Scarlet fever	171	13	182	7
Cerebro-spinal meningitis	0	1	4	1
Measles	164	5	192	9
Diphtheria	210	35	217	35
Croup	9	7	22	9
Tuberculosis	229	118	220	114

The Twelfth International Medical Congress.—Dr. A. Jacobi, the chairman of the American national committee, has issued the following, dated March 10th:

In a letter dated Moscow, February 14th, the secretary-general, Professor W. K. Roth, communicates the following facts for the information of the American physicians who intend to participate in the Twelfth International Medical Congress, which is to be held at Moscow from August 19th to 26th: The transatlantic steamship companies refuse, one and all, any reduction of the usual charges. In their replies, most of which are couched in courteous language (the originals are in the possession of the undersigned), they admit the existence of a trust or contract or agreement which prevents them from lowering their prices; a few are so polite as to express their regrets. Reductions of fares on Russian railroads are expected shortly. The French, Spanish, Swedish, and Hungarian railroads promise a reduction of 50 per cent.; so do the Italian for a distance of 500 kilometres; less (down to 30 per cent.) for shorter distances. The Mediterranean lines (Messageries maritimes, General Italian Navigation Company, Austrian Lloyd) grant from 25 to 50 per cent. The undersigned, chairman, is not authorized to issue certificates of any kind in favor of congressists. He will try to ascertain, however, in what way their movements may be facilitated, and may receive a reply in the second half of April. Abstracts of papers to be read before any of the sections ought to reach the secretary-general before June 1st, in order to be printed in the preliminary volume. A special prospectus containing the final details referring to traveling, lodging, festivities, etc., is promised for the near future. It will be communicated at once to the medical journals, and to the press of the country.

Dr. Prince A. Morrow, No. 66 West Fortieth Street, New York, the American president of the Section in Dermatology and Syphilology, announces the following subjects of discussion in that section: *Dermatology.*—Actinomycosis, Primary Tuberculosis of the Skin, Cutaneous Sarcomatosis, Acanthosis Nigricans, The Pathogeny of Alopecia Areata, Blennorrhagic Eruptions, Eruptions of Malarial Origin, Hydrargyric Eruptions, The Treatment of Sclerodermia, and The Treatment of Rhinoscleroma. *Syphilology.*—When should we Begin the Treatment of Syphilis with Mercury ? How Long should the Treatment of Syphilis be Continued ? Is it Necessary to Treat Syphilis from the Moment of the Appearance of Syphilitic Accidents, or to Institute a Provisional Treatment without these Accidents ? The Modification of the Anatomical Elements of the Blood in Syphilitics during the Condylomatous Period, and The Methods of Treatment of Syphilis by Soluble and Insoluble Mercurial Injections. Dr. Morrow expresses the hope that there will be a creditable representation of American dermatologists and syphilographers at the Moscow meeting, and requests that persons who intend to contribute to the discussion should send him the titles of their papers.

Health Reports.—The following statistics relating to small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine-Hospital Service:

Small-pox.

Pensacola, Fla	Feb. 28–March 6	1 case.	
Alexandretta, Syria	Jan. 1–31	2 cases.	
Aleppo, Syria	Jan. 1–31	50 "	3 deaths.
Calcutta, India	Jan. 23–30		2 "
Callao, Peru	Jan. 24–Feb. 7		1 death.
Cardenas, Cuba	Feb. 20–27	260 "	22 deaths.
Cienfuegos, Cuba	Feb. 21–28		1 death.
Dublin, Ireland	Feb. 13–20	2 "	
Erzerum, Turkey in Asia	Jan. 31–Feb. 13	8 "	2 deaths.
Genoa, Italy	Feb. 14–21.	3 "	1 death.
Gibraltar	Feb. 14–28	2 "	
Guayaquil, Ecuador	Feb. 5–19		1 "
London, England	Feb. 13–20	34 "	1 "
Madras, India	Jan. 30–Feb. 5		4 deaths.
Odessa, Russia	Feb. 13–20	33 "	9 "
Paris, France	Feb. 13–20		1 death.
Rio Grande do Sul, Brazil	Jan. 1–31	19 "	3 deaths.
Rotterdam, Holland	Feb. 14–21	1 case.	
St. Petersburg, Russia	Feb. 13–20	13 cases,	2 "
Warsaw, Russia	Feb. 6–20		7 "

Cholera.

Calcutta, India	Jan. 23–30		32 deaths.
Madras, "	Jan. 30–Feb. 5		3 "

Yellow Fever.

Bahia, Brazil	Year of 1896	104 cases,	51 deaths.
Cardenas, Cuba	Feb. 20–27	5 "	
Matanzas, "	Feb. 17–24		1 death.
Para, Brazil	Feb. 6–20		12 deaths.
Sagua la Grande, Cuba	Feb. 20–27	9 "	2 "

Plague.

Bombay, India	Feb. 2–9		745 deaths.

The National Confederation of State Medical Examining and Licensing Boards.—The seventh annual meeting will be held in Philadelphia on Monday, May 31st, under the presidency of Dr. William Warren Potter, of Buffalo. The programme includes the following addresses and papers: The address of welcome, by Dr. A. H. Hulshizer, of Philadelphia; the response, by Dr. Charles A. L. Reed, of Cincinnati; the president's address, by Dr. William Warren Potter; an address by Dr. J. W. Holland, of Philadelphia; Some Practical Experience with and Results of the Medical Law of Pennsylvania, by Dr. William S. Foster, of Pittsburgh; and The Need of Exact Information as to the Equipment, Methods, and Requirements of our Medical Schools, by Dr. J. N. McCormack, of Bowling Green, Kentucky.

An Amusing Reply to an Examination Question.—The *Lancet's* Vienna correspondent says: "Medical circles in Vienna have been much amused by an answer given by a student who was being examined in pathological anatomy and was asked to name the organs of the body in which cysts most commonly occur. He enumerated several, but omitted to mention the ovary, whereupon the examiner good-naturedly said: 'Try to think of an organ which you do not possess,' and the candidate, who was of Jewish extraction, immediately replied: 'Oh, the prepuce!'"

The Muetter Lectureship of the College of Physicians of Philadelphia.—The next course of ten lectures instituted by the late Professor Thomas Dent Mütter, M. D., LL. D., on Some Point or Points in Surgical Pathology, will be delivered in the winter of 1899 to 1900. The compensation is $600. The appointment is open to the profession at large. Applications stating in full the subjects of the proposed lectures must be made before October 1, 1897, to the Committee on the Mütter Museum, Dr. John H. Brinton, Chairman, northeast corner of Thirteenth and Locust Streets, Philadelphia.

The New York Celtic Medical Society.—At the next regular meeting, on Thursday evening, the 25th inst., Dr. McGowan will read a paper on Acne and its Treatment. Scientific communications will be made, cases presented, and instruments and specimens exhibited.

Society Meetings for the Coming Week:

MONDAY, *March 22d:* Medical Society of the County of New York; Neurological Society of Philadelphia; Boston Society for Medical Improvement; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *March 23d:* New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Medical Society of the County of Lewis, N. Y. (quarterly); College of Physicians of Philadelphia (Section in General Medicine); Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *March 24th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *March 25th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Massachusetts, Society for Medical Improvement (private); Pathological Society of Philadelphia.

FRIDAY, *March 26th:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society; Northern Medical Association of Philadelphia.

SATURDAY, *March 27th:* New York Medical and Surgical Society (private).

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 7 to March 13, 1897:*

CLENDENIN, PAUL, Captain and Assistant Surgeon, is transferred from Fort Warren, Massachusetts, to Key West Barracks, Florida, to relieve KEAN, JEFFERSON R., Captain and Assistant Surgeon, who is transferred to Fort Warren.

MCCREERY, GEORGE, Captain and Assistant Surgeon, is ordered to Fort Warren, Massachusetts, for temporary duty, in addition to his present duties.

WILLCOX, CHARLES, Captain and Assistant Surgeon, West Point, N. Y. The leave of absence granted him is further extended one month and fifteen days, with permission to go beyond sea.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Two Weeks ending March 13, 1897:*

ELLIOTT, M. S., Assistant Surgeon. Detached from instruction at Naval Laboratory, New York, and ordered to the U. S. Steamer Columbia.

AMES, H. F., Surgeon. Detached from the U. S. Steamer Detroit and ordered to the U. S. Steamer Cincinnati.

BERTOLETTE, D. N., Surgeon. Detached from the U. S. Steamer Minneapolis, ordered home, and granted leave of absence for three months.

BRODRICK, R. G., Assistant Surgeon. Detached from the U. S. Steamer Constellation, March 15th, and ordered to the New York Navy Yard, March 17th.

CRAIG, T. C., Surgeon. Detached from the Marine Rendezvous, New York, and ordered before the retiring board, March 16th, then home, and to await orders.

DRAKE, N. H., Surgeon. Detached from the U. S. Steamer Cincinnati and ordered to the U. S. Steamer Minneapolis.

HUBBARD, G. C., Assistant Surgeon. Detached from the U. S. Steamer Cincinnati and ordered to the U. S. Steamer San Francisco.

PRYOR, JAMES C. Commissioned as Assistant Surgeon from February 27th.

Answers to Correspondents:

No. 457.—There is a book on the subject by Dr. Bezley Thorne, published in London.

Births, Marriages, and Deaths.

Married.

NICHOLS—SEIDENBERG.—In Chicago, on Tuesday, March 2d, Dr. James Allen Nichols, of New York, and Miss Marie A. Seidenberg.

Died.

LAW.—In Canton, Mississippi, on Thursday, March 11th, Dr. William Law, in the eightieth year of his age.

MASON.—In New York, on Friday, March 12th, Dr. Sumner A. Mason, in the fifty-seventh year of his age.

SPRAGUE.—In Williamson, N. Y., on Tuesday, March 9th, Dr. John A. Sprague, in the forty-fifth year of his age.

WHITE.—In New York, on Tuesday, March 9th, Virginia Bruyere, wife of Dr. Charles B. White.

WRIGHT.—In New York, on Tuesday, March 16th, Dr. Clark Wright.

Letters to the Editor.

THE UNAUTHORIZED USE OF A NAME.

113 WEST SEVENTY-SEVENTH STREET, NEW YORK, *March 7, 1897.*

To the Editor of the New York Medical Journal:

SIR: It has just come to my notice that a circular advertising the sale of an instrument which I have recommended, and further have nothing to do with, is being distributed among the medical profession. This whole procedure is unauthorized, and I have taken the proper means to prevent any further distribution of said circular. ALFRED WIENER, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of November 11, 1896.

The President, Dr. R. C. NEWTON, of Montclair, N. J., in the Chair.

(Concluded from page 227.)

The Treatment of Keloid with Thiosinamine.—The PRESIDENT read a paper on this subject. (See page 380.) Dr. SINCLAIR TOUSEY said that his attention had been first called to thiosinamine at the time (1891) when this drug, with many others, was being investigated in Germany with the hope of discovering a cure for tuberculosis. He had noted that, while it had apparently failed as a cure for tuberculosis in all its forms, it had proved to be of value in causing the absorption of cicatricial tissue from tuberculosis, as in extreme cases of ectropion. From this had been made the deduction, original with him, that in this drug would be found a cure for this special disease of cicatricial tissue. This action had been demonstrated in a number of cases before the publication of his article in the *New York Medical Journal* for May 2, 1896. The substance was closely allied to urea, urea being CO, with two NH_2 radicles; thiosinamine being CS, with one NH_2 radicle and one C_3H_5. A series of bacteriological experiments had been made in Europe with this drug, and it had been found that it was not a germicide in any way. It would prevent the growth and multiplication of germs even in very great dilution, but even if a culture was saturated in it, germs would still continue to live, and, under favorable circumstances, would begin to grow again. His explanation of the way in which it acted on keloid and the like was found in the fact that it produced a very marked effect upon the blood. Within five minutes the number of white blood-cells was reduced to a third of the normal, and within about four hours the white cells had increased about to the normal, and for the following forty-eight hours there was pronounced leucocytosis. He had used smaller doses, beginning with ten minims of a ten-per-cent. solution, in a sterilized mixture of glycerin and water, and had usually used twelve minims as a regular dose. He had used it entirely as a systemic remedy, injecting it into the triceps. This drug was decomposed by heat, and the menstruum must therefore be sterilized before the drug was added. There had been no fatal cases and no serious disturbances; the nausea and headache were the worst symptoms that could happen, and these were avoided by small doses. It was interesting to note that this very great increase in the physiological activity of the blood was associated sometimes with the development of acute symptoms from latent processes. In latent phthisis it might start up fever, expectoration, etc., from the absorption of encapsulated pus, and in that case it was doubtful whether the effect was beneficial or not; but in another case on the same line, a case of chronic osteomyelitis, the effect had been to start up the local processes again, followed by the extrusion of an old sequestrum and definite healing. He spoke of using it in a number of cases of malignant disease, where it had been simply a question of trying to relieve symptoms, and said he was satisfied there had been some improvement. The discharge was less offensive, and it had prolonged life to some extent. He spoke of two or three recently treated cases of keloid which he had cured; one in a house physician who had had blood poisoning from a scratch received in excising a rib, keloid developing in the multiple cicatrices from the incisions for cellulitis.

Dr. George T. Jackson stated that he had not used thiosinamine, but was much interested in the subject. He thought one should draw a sharp line between keloids and hypertrophied scars. Microscopically their distinction was difficult, if not impossible; clinically, they were very different. Hypertrophied scars would sometimes disappear of themselves, whereas the true keloid did not. He had seen keloids much improved by keeping them covered for a long period of time with mercurial plasters; he had never seen one get well. He had seen reactions similar to that following thiosinamine injections follow the injections of other alleged curative substances, as in epithelioma and lupus. Improvement had seemed to take place for a time, but it had not been permanent. He would be very glad to give thiosinamine a thorough test at the Vanderbilt Clinic.

Dr. L. B. Bangs said that at his suggestion some experiments had been made with this drug at St. Luke's Hospital, but he did not know the results.

Dr. Tousey asked the reader of the paper if his patients had experienced any local effect in the keloid. His patients had all done so; there had been a feeling of tension, and with some almost an actual pain during the following day.

The President said that in the second case he had spoken of, he had thrown the injection into the fleshy part of the neck, and had noticed that the whole keloid would get blue; the man had seemed to be sick and dizzy; he would look pale and feel badly for fifteen minutes, and after that there were no other symptoms. He had strong nerves, had been a laboring man all his life, and could stand what a delicate person could not. On the other hand, the girl (whose case he had presented) had been very nervous, and had been in a wretched condition for a whole day after the injection, but when she left the hospital was much improved.

Progressive Muscular Atrophy in the Young.—Dr. William L. Stowell read a paper with this title. (See page 383.)

The President said that the disease seemed to be hereditary; the classical progressive muscular atrophy began in the spinal cord. He thought that it occurred more frequently in families with an alcoholic history. Some one had said that the microscope was a clumsy instrument in nervous diseases, but much advance had been made in the last twenty or thirty years. He had never heard of acute poliomyelitis anterior until he had been practising some time. One of his patients had had a drawn-up leg, which had been attributed to chronic malarial poisoning in childhood; another had had atrophy of all the muscles of one leg, and he had been told that the trouble was hip disease. Both of these cases and others that could be mentioned had been, in the speaker's mind, due to acute poliomyelitis anterior. It was only within a comparatively few years that the profession had known anything definite about the muscular atrophies and dystrophies.

Dr. Stowell said that he thought some one might object to its being included under progressive muscular atrophy. As to the disease being hereditary, he had been careful in this instance to get the family history, and although there had been between forty and fifty persons very nearly connected, there had been not a sign of nervous disease in the family. He had seen three or four other cases in the city where there had been no family history of nervous disease.

Surgical Treatment of Bladder Disease.—Dr. Ramon Guitéras read a paper in which he said he would only occasionally touch upon the ætiology, symptomatology, and pathology of the different diseases, but would principally consider the treatment of the various conditions in cases where the use of instruments was necessary, mentioning occasionally some internal remedies when they were used as adjuvants to the surgical treatment advocated. The diseases to be considered were the forms of cystitis, vesical calculi, and tumors. Cystitis might be acute or chronic, and might depend upon urethritis, stricture, enlarged prostate, tuberculosis, vesical calculi, or tumors of the bladder.

Acute Cystitis.—This condition was usually of gonorrhœal origin. It did not occur so frequently as a complication of urethritis as had formerly been thought, since most of the cases once considered such were now thought to be merely bad cases of posterior urethritis. In this condition he recommended rest in a recumbent position, alkaline diuretics, urinary disinfectants, antispasmodics, and sitz baths for a few days before surgical interference was resorted to. Then irrigations of the bladder should be given by the Janet method with a 1-to-16,000 solution of nitrate of silver every day or every other day, and the strength increased gradually. The strength of irrigation given in this way should not be increased to more than 1 in 2,000. In cases where irrigations were not well borne, instillations of nitrate of silver might be made by means of an Utzmann syringe, injecting from ten to twenty drops in this way, beginning at a strength of 1 in 1,000, and increasing occasionally to as high as 1 in 50. In these acute cases some advised injections of silver solution from 1 to 2,000 to 1 to 500 through a velvet-eyed soft-rubber catheter passed into the bladder by means of an Utzmann or Guyon large hand syringe. These were praised by some and condemned by others. He had had very little personal experience with this method, but did not see why, if used with skill and judgment, it should not be of value.

Chronic Cystitis.—When a bladder was chronically inflamed, in addition to surgical treatment it was important to pay attention to the clothing, bowels, skin, etc., and to prescribe antiseptics and diluents. Of urinary antiseptics, benzoic acid and benzoate of sodium and ammonium, boric acid, nitrate of silver, and boroglycerides were good. About two ounces of one of these was used after the washings escaped perfectly clear. One of 1 to 2,000 to 1 in 1,000 nitrate of silver was the best. This could be increased gradually in some cases to a strength of 1 in 500.

Cystitis due to Stricture.—A cystitis of this nature was usually associated with a stricture of small calibre, especially of the deep urethra. Here the treatment consisted in employing the means laid down under the chronic form, and enlarging the stricture by dilatation if it was yielding. In case it was not yielding, the anterior stricture should be cut by the Otis urethrotome, the Maisonneuve, or perhaps by the Fort electrolyzer, under the strictest antiseptic precautions; and if deep, it should be operated upon by external perineal urethrotomy, to be followed by thorough drainage through the perineal opening.

Cystitis due to Enlarged Prostate.—Hypertrophy of the prostate usually occurred after the age of fifty, and as in stricture caused an obstruction which hindered the emptying of the bladder. Here two things were indicated, to relieve the cystitis and to reduce the size of the obstruction. In order to accomplish this a catheter should be used twice daily to remove the residual urine, and the cystitis should be treated as before mentioned. When the ordinary soft-rubber catheter could not be introduced the elbowed catheter should be used.

Of the various surgical methods of treating this trouble, stretching with sounds, in case these did not irritate, could be tried, and the various methods of drainage, one of which consisted in draining by means of a catheter introduced through the urethra, and another was the perineal method.

One of the troublesome complications of enlarged prostate was retention of the urine, which usually came on after exposure to cold or excesses in eating and drinking. He recommended in these cases giving first morphine hypodermically and a hot bath, and, if these failed, to catheterize, being careful not to empty the bladder at one sitting. If catheterism was impossible he recommended aspirating over the pubes. Of radical treatment, a number of operative procedures were in vogue—namely, resection of the vas deferens, castration, enucleation of the prostate, and the formation of a permanent perineal or suprapubic fistula. He had never tried resection of the vas deferens, but in his experience most of the other operations spoken of had not given very good results, although they had seemed to have in the practice of others.

Tuberculous Cystitis.—This condition usually occurred in young adults between the ages of fifteen and twenty-five, in whom, perhaps, there was a tuberculous history. It was generally due to inoculation from tuberculous urine coming from the kidney, often from extension of the process along the ureters, or from the seminal vesicles or the prostate. It might also appear in the bladder wall, having been brought there directly by the blood current. The favorite seat of vesical tubercles was the trigonal submucous coat. The symptoms resembled very closely those of stone in the bladder, and were almost identical with those of gonorrhœal cystitis. In all these cases surgical interference was generally of no service, and internal medication seemed to be preferable. Bladder drainage or perineal section was of no advantage, as the wound usually became infected afterward and left a troublesome sinus. He did not consider irrigation of any benefit. Some authors recommended injections of bichloride of mercury, but these were condemned by others. Some spoke highly of sandalwood oil given internally. He thought, however, that plenty of fresh air, proper clothing, food, and drinks, combined with rest in a dry, warm, and uniform climate, would produce the best results.

Stone in the Bladder.—Stones were composed of the salts or solid constituents of the urine—namely, of uric acid, oxalic acid, or the phosphates, alone or more frequently combined. Patients with a tendency to stone should regulate their diet, put themselves in good physical condition, and drink plenty of water. Internal or local solvents were not of much value.

In regard to the operative treatment, there were various methods—namely, the lithotomies, perineal and suprapubic; the lithotrities, urethral and perineal; and litholapaxy. Of these, the lithotomies had formerly been employed, but they had been superseded by lithotrities, which in turn had been replaced by litholapaxy. At the present date, however, the suprapubic operation was the usual one, although it was not so safe by any means as litholapaxy. The perineal lithotomy and the lithotrities were now rarely if ever performed. Litholapaxy was simply a perfected lithotrity performed at one sitting. In lithotrity the stone was crushed in several sittings, after which the pieces were passed with the urine. When anæsthesia was introduced more time could be taken for a crushing, and more powerful and larger instruments were used, in addition to which evacuators had been devised which facilitated the removal of the crushed fragments. In all cases where there was a tendency to stone formations, an ounce of prevention was worth a pound of cure, and this prevention varied. In uric-acid cases the patient should limit himself to a light diet, and not indulge too freely in meat, eggs, figs, fats, fried food, highly seasoned food, sweets, sweet wine, or malt liquors; but should try to keep his digestive and urinary systems, as well as his general health, in good condition. For this latter purpose, plenty of exercise, large quantities of water, and occasionally Carlsbad salts, were of high value. When large quantities of uric-acid crystals were present in the urine, lithium and potassium salts were useful solvents. In oxalic cases the same rules applied, with the addition of omitting fruit containing the acid—as, for example, rhubarb, oranges, strawberries, and tomatoes. In phosphatic cases the condition of the patient would be improved by rest from care, plenty of exercise, and nitrohydrochloric acid. In this last group of cases the urinary antiseptics which checked fermentation in the bladder were of great value. Solvent treatment he did not think to be of much value, as a calculus was usually composed of several salts. Lithium or potassium salts taken internally might possibly destroy a uric-acid calculus were it not for the albuminous covering it had. Of fluids injected into the bladder, a weak solution of nitric acid might have some slight effect on phosphatic calculi, if they were purely phosphatic.

Differences between Lithotrity and Litholapaxy.—The perfected litholapaxy seemed the safest operation and gave far less inconvenience, confinement to bed, and after-treatment, but of late it appeared to have lost its popularity among the surgeons of this country and to have been replaced by the suprapubic operations. In Continental countries, however, it still justly retained popularity. Perineal lithotomy, like lithotrity, seemed to have fallen into disuse. In regard to the choice of operation, he thought one important fact should be noted—*i. e.*, that in children and young adults the mortality in surgical interference was far less than in old people. The ages which were considered as marking the development and decay of the genito-urinary organs were fourteen and fifty. Therefore, tables of statistics were usually formulated according to this standpoint; children below fourteen, adults between fourteen and fifty, and old people above fifty. He gave a rough estimate of the mortality taken from a table of the statistics of perineal lithotomy, suprapubic lithotomy, and litholapaxy, covering nearly three thousand cases, as follows:

	Perineal lithotomy.	Suprapubic lithotomy.	Litholapaxy.
Under 14	2¾	12½	1½
From 14 to 50	11½	12	3¼
Over 50	16½	32	6

Thus it could be seen that in all ages litholapaxy was safer than any one of the other operations; that the further the patient advanced in age the safer litholapaxy in proportion became. If the stone was too hard or too large to be removed by crushing or perineal section, a suprapubic operation might be resorted to; but it must not be forgotten that stones weighing five or six ounces could be removed by crushing, and that one was rarely encountered above that size. Calculi that required a cutting operation were those where there was a tight stricture, where the stone was encapsulated or exceedingly large, or where the nucleus, a piece of broken catheter, for instance, could not be removed without the greatest difficulty. Cystitis occurring with a stone was much aggravated by it, and litholapaxy increased its severity for a few days. This condition, however, rapidly improved after the removal of the stone; in cases of calculus when, in addition to cystitis, pyelitis and pyelonephritis existed, which frequently occurred in cases of urethral or prostatic obstruction, the condition was a most serious one, but with careful treatment, before, during, and after the operation, the results were often most satisfactory.

Tumors of the Bladder.—These generally occurred in the male after the age of thirty. There were two varieties, benign and malignant. The benign were generally papillomas, although myxomas (polyps) and myomas occasionally occurred. The malignant were sometimes sarcomas, though nearly always carcinomas. The benign tumors (papillomas) were generally situated in the lower zone of the bladder. Of malignant growths, carcinoma was the most frequent, and generally occurred after the age of fifty. Sarcomas were comparatively rare, but might occur at any age. The pain and tenesmus in cases of bladder tumors were usually controlled by opium and belladonna, and the hæmorrhage was generally treated by irrigations of very hot water. In regard to the radical treatment of benign growths, they should be removed immediately, unless the patient was in a very exhausted condition, or serious kidney trouble was present. Thompson advised a perineal section, but the suprapubic operation was a preferable one. After the bladder had been opened suprapubically, various specula were employed to hold the wound open, or long retractors, or traction sutures. Artificial light reflected from a head mirror was often of service in looking into this viscus, or a small electric light and a cystoscope. Pedunculated growths might be removed by galvano-cautery scissors or ordinary scissors. If the pedicle was cut by ordinary scissors it was well to touch the stump with the Paquelin cautery to stop the hæmorrhage. When these tumors were sessile the curette was better, after which their bases could be touched with a cautery.

After the operation no effort should be made to close the bladder, but siphon drainage should be used. Colpocystotomy was not very practicable in these cases. About sixteen per cent. of patients in cases of removals of benign tumors recovered, forty-seven per cent. lived from one to four years, and thirty-seven per cent. died within four months.

Regarding malignant growths, there were two operations for carcinoma—resection and opening for drainage. Suprapubic drainage was of great value for tenesmus, pain, and hæmorrhage. Resection might be performed by the extraperitoneal method where growths were small and situated at the top of the viscus. The results were either fatal or a recurrence inside of four years. An operation for drainage was on the whole preferable.

Dr. Bangs said that in the first class of cases of cystitis he did not understand why so large a quantity of fluid as thirty ounces was used. In regard to the treatment of cystitis due to stricture, he asked if the reader recommended the use of Fort's electrolyzer, and wished to know if he had found it successful in his practice. Cystitis did not always follow because a man had enlarged prostate. It was often the result of the zealous efforts of the surgeon to remove one of the symptoms—namely, inability to evacuate the bladder. He agreed with the reader of the paper in his treatment of tuberculous cystitis. There were cases in which drainage could be instituted, but only hygienic treatment of tuberculous cystitis could succeed. He had understood the reader of the paper to say that litholapaxy was not popular in this country. It required skill, dexterity, and speed in manipulation, but he considered it the typical operation in removal of stones from the bladder.

Dr. F. H. Wiggin said that he would like simply to emphasize one point in the paper. The writer had spoken of using an aspirator in cases of retention of urine. Recently he had attended a patient over eighty years of age, with an enlarged prostate. He had not passed urine for three days, and the attending physician had been unable to use a catheter. The speaker had aspirated the patient and drawn out ten ounces of urine, and then had had no trouble in using the catheter.

Dr. M. J. Echeverria said that for washing out bladders, the writer of the paper had only mentioned one way, by the force of gravity. In his own experience he had found it very unsatisfactory, and oftentimes harm was done by the water rushing in with great force. Often drops of blood would follow the washing, and the patient would complain of pain for several hours, tenesmus was increased, and the patient had to empty the bladder of small quantities of water very often. He used instead the common syringe passed through the meatus, and the urethra drawn tight around it; he would then distend the anterior urethra, and without exerting much pressure, getting the patient to bear down, or having him take several deep breaths in succession, insisting on abdominal breathing, he could open the bladder with very little effort. He would put into the bladder from two to six ounces of fluid, and afterward the patient did not complain of tenesmus or frequency of micturition.

Dr. Samuel Alexander said that he believed litholapaxy the best operation for removal of stone in the bladder. The only contraindication would be certain cases where the condition of the bladder made it impossible to evacuate the entire stone, owing to the existence of diverticula. He had recently removed two hundred and thirty grains of calculus from a patient seventy-two years of age, under cocaine anæsthesia, without pain. He believed the bladder could be anæsthetized with cocaine in cases in which a general anæsthetic was contraindicated. He agreed with the previous speakers as to the inadvisability of operative treatment in cases of tuberculous cystitis, but thought vesical drainage was of value in advanced cases for the relief of pain. In regard to the use of electricity in the treatment of stricture, he was opposed to it. The operation of Dr. Fort alluded to in the paper accomplished nothing more than could be obtained by a forcible divulsion of the stricture to a moderate extent. The condition of the patient was no better after it than from divulsion.

Dr. George Swinburne said, in regard to irrigation of the bladder, that he used the gravitation method more than any other, but sometimes had patients complain of tenesmus for several hours after the operation, and had often been obliged to lower the receptacle to a height of only two feet. He spoke of a case of cystitis with a great deal of purulent urine; he had irrigated with a 1-to-3,000 nitrate-of-silver solution, and in a short time the urine had cleared. In regard to the treatment of tuberculosis of the bladder, he thought surgical interference had frequently been tried when it was of no use. The treatment with bichloride had been of some use; but he had seen recently in the *Annales des maladies des organes génito-urinaires* for 1895 that Lamarque had tried formalin for this trouble, and in the five cases in which he had used it there had been at least a lessening of all the symptoms—the frequent desire to urinate, the hæmaturia, the purulent urine, and the pain.

Dr. Tousey said, in regard to the retention of urine, that he recalled a case where the physician who had been called in had attempted to pass a metallic catheter, had succeeded in establishing a false passage, and, feeling that there was some resistance, had thought that possibly he might open up a channel through the urethra and open the bladder by inflation with air. He had accordingly blown forcibly through the catheter, and had succeeded in producing emphysema extending down to the thighs and up to the umbilicus. He spoke of another case where the man had had a diffuse carcinoma or epithelioma of the bladder, where perineal drainage and suprapubic cystotomy had been resorted to. The man had been so very miserable, suffered so much, and the urine was so thoroughly saturated with blood, that it had been suggested to try thiosinamine. Under this remedy the urine had become perfectly clear and the man's general condition had improved.

Dr. Stowell said that among children a weakness of the bladder was very common. Stone in the bladder he had seen occasionally, and had successfully operated on a boy of two years.

Dr. Guitéras said that in his paper he had stated that some bladders held one or two ounces while others held thirty, but that eight to twelve ounces was usual for an injection by the Janet method. In regard to the electrolyzer, he did not advocate it particularly, but simply offered it as a suggestion. In regard to litholapaxy, when he had been in college they used to go around every Saturday seeing crushed stones, and that had been impressed upon him as the best method of treating stone in the bladder. In Vienna, Paris, and London, they crushed the stones, but the majority of men on this side were doing suprapubic cystotomy, and in looking over the cards of the different hospitals, in almost every case the suprapubic cystotomy was announced for stone in the bladder. It was for this reason that he had concluded that litholapaxy had become unpopular in this country.

Meeting of Wednesday, December 9, 1896.

The President, Dr. R. C. Newton, of Montclair, N. J., in the Chair.

Atrophy of the Optic Nerve from Lactation.—Dr. H. S. Oppenheimer presented a case of this kind. The patient was a woman twenty-nine years old, who last spring had had a healthy child born to her in a normal way, and some seven or eight weeks after her confinement (she had been nursing the child) she had come to the speaker complaining that her left eye had begun to be foggy and useless. She was a healthy woman with the exception of headaches which she had had for two years. She had had three other children who were healthy; the husband was a healthy man. The condition of the eye then had been that of papillitis, to the degree that the inflammation of the papilla had extended into the retina some little distance. The vision had been reduced to counting fingers at one foot eccentrically. She had been pale, quite anæmic, and had headaches. Her urine had been normal, with the exception of showing some excess of uric acid. The speaker had had her family physician examine her thoroughly, and, as her headaches had continued, she had also been examined by a good neurologist, who could find nothing wrong except what the speaker had mentioned. The woman had been advised to give up nursing her child, she had been sent to the country when she could go, and given tonics, including iron, and later strychnine had been used, with the result that the vision had improved so that she could count fingers at ten feet, or a little more; but the nerve now showed a distinct atrophic condition. Looking over the literature of the case and not being able to find any reason for the neuritis, the speaker had found that there were four different kinds that one was apt to meet with during pregnancy and lactation aside from retinitis albuminurica. One was uræmic amblyopia, usually accompanied with albuminuria, without retinitis, which ran a course very much like other albuminuric conditions and had only this difference from the ordinary kidney troubles, that the prognosis was much better. The second variety was amblyopia, which might come on during pregnancy or lactation, which was not associated with albuminuria at all, but might be associated with convulsive conditions and some cerebral disturbances, and in the course of time usually got well. This form had been observed by Leber, Currier, and others, during or shortly after parturition, and had been designated as reflex amaurosis. Here we were to suppose a vasomotor reflex issuing from the uterus and causing a disturbance in the cerebral vessels. It seemed probable that in this way damage was done to the nerve fibres in the brain as well as to the optic nerves. The damage was caused, according to Rumpf and Kuhnt, by the exudation of lymph through stasis. Ophthalmoscopically, signs of venous stasis were observed, even to neuritis optica. Vision usually returned. The third class of blindness during this period was usually caused during parturition by great loss of blood, as in other non-traumatic hæmorrhages, as from the stomach, etc. On looking up the literature we found not a few of these patients remaining permanently blind. Fourth, we found amaurosis or amblyopia, like the one shown here, and it was usually double. This woman's right eye had been normal throughout. During lactation there had come on what seemed to be a neuritis; it certainly had been one in this case. The papilla had been distinctly swollen, and extended into the retina. In most of the cases reported, and there were not a few, there had been no observations made during the acute conditions of the trouble, and when they came to the attention of the physician the condition of atrophy was noticed. In all cases reported by Nettleship, only one had been seen when the trouble was new, and the condition now described had been found. Heinzel had reported four of these cases seen in the clinic of Dr. Fuchs, of Vienna, and in all of them there had been this condition of neuritis. Kines and Nettleship contended that lactation produced a condition of exhaustion and anæmia, and in that way predisposed to disease in general, and with this also to neuritis. Berger held that there was a migration of microbic bodies from the genital tract, and that the neuritis was caused in that way. Hinsly said that this trouble was not produced from lactation, but was produced from the cessation of lactation, just as suppressio mensium had been known to produce it. Heinzel, in his paper on the subject, suggested that it might be due to some toxic substances evolved during the period. He thought that, if we took a broad view of the causes of neuritis in general, we found that we had to deal frequently with poisons—such as lead, arsenic, and alcohol—as the cause of neuritis; tobacco and quinine produced almost typical varieties. Syphilis and diabetes produced neuritis, probably through some toxic matter, and he could not see why during the period of lactation some similar process might not be gone through. Möbius and Taillant had also reported peripheric neuritis in other parts which they ascribed to the same cause.

Dr. W. B. Johnson thought it a very interesting case, especially as related to its ætiology; the period of lactation having existed for so short a period of time previous to the outset of difficulty seemed to indicate that as the cause of the condition. The nature of the particular variety of inflammatory trouble that might have occurred at the time was difficult to determine.

Dr. Oppenheimer said that he rather inclined to the view that the prognosis was favorable; that the case had been under treatment four months, and had improved in vision from ability to count fingers at one foot to counting at ten feet. The speaker had seen one or two of these cases that had done very well, but in those cases the improvement had been more pronounced and rapid, and in the present case he was inclined to think the prognosis bad. The woman was getting better; how much better she would get, of course, it was difficult to say. We were supposed in these cases to think of a reflex starting from the uterus or genital tract and influencing the vessels in the brain. Kunth and Rumpf both reported that it was a case of lymph exudation produced by stasis in the vessel. If we admitted that a reflex could take place, there was no reason why that did not explain it. In a few cases which had been seen at the beginning there had been also this matter of stasis. He believed that, besides the stasis in the papilla or the inflammation of it, there must have been something back of the organ, either continuous with it or contiguous to it, for on pressing the eye back into the socket the woman had complained of pain, and she probably, besides having the papilla swollen, had had a retrobulbar neuritis. The treatment had been first with tonics, and then with hypodermic injections of strychnine, which had helped her somewhat. She was not retrograding.

Dermoid Cysts.—Dr. Brooks H. Wells presented two specimens. One was part of a dermoid cyst, and contained a well-developed tooth imbedded in a small portion of bone. The patient, a young married woman about twenty-seven years of age, who had been perfectly well, three years ago had had a child. The labor and the convalescence had been normal. About six months ago she had begun to complain of obstinate constipation and pain along the sciatic nerve. She had been treated by a physician for sciatica, but, not receiving any benefit, had gone to another, who had discovered a pelvic tumor and had made the diagnosis of a dermoid cyst occupying nearly the whole of the upper part of the pelvis. The operation had been done at the patient's house, and convalescence had been normal. The other specimen was a uterus containing a submucous fibroma and also a large number of interstitial fibroid nodules. It had been removed by abdominal hysterectomy; convalescence had been uneventful.

Dr. D. E. Walker said, with reference to the diagnosis of these dermoid cysts, that, without a history as a guide, one might make an error after feeling a body like the bone spoken of in this tumor. In some of those rare cases of ectopic pregnancy where there was final death of the fœtus at an advanced age, the bones sometimes could be felt in the mass of the tumor. The history would probably lead one, if a clear history could be obtained, to make a correct diagnosis. He had never seen one of these cases, though two of his friends had had a case of that kind where the bones could be felt clearly. The curious thing about these cases of dermoids was that they were sometimes found in a woman who had had children within the last two or three years, and apparently involving the whole of both ovaries. He had seen one such case, and in each of the dermoids there had been the usual formation of hair. In those cases a certain portion of the ovary must have been active enough to produce an ovum. He did not think that those tumors could have been formed after the birth of the child. He remembered one case in which both ovaries had been affected in that way, and the smallest tumor had been of about the size of a good-sized orange, the other of about the size of a cocoanut.

Treatment of Ingrowing Toe Nails.—Dr. J. A. Andrews read a paper on this subject. (To be published.)

Dr. Walker said that he had seen a great many of these, but they had not gone on to a suppurative process. He had treated them with plaster and cotton, and in the last one, where the inflammation had been near the root of the nail, he had used a bunion plaster with good success.

Dr. F. L. Taylor said that he had done Anger's operation a number of times in the Chambers Street Hospital, and the results had been very satisfactory. One had to operate for ingrowing toe nail much more frequently in hospitals than in private practice, as the people had to earn their living and could not rest to cure ingrowing toe nail, as they could if in better circumstances. A great many cases would get well from rest alone.

Dr. Henry H. Schroeder said he had always had success with the operation mentioned in Wyeth's *Surgery* in cases where there was suppuration, or where other methods had failed. The operation consisted in a transverse incision across the toe just above the nail; from this, another cut was made down through the nail, bisecting it. Both parts of the nail were then extirpated, together with the matrix.

Dr. Johnson said, in regard to hypodermic injections of fifteen drops of a two-per-cent. solution of cocaine, one could get the same effect with no danger by the use of the Schleich solution; that was, a very small portion of cocaine, a very small portion of morphine and carbolic acid, and a very small portion of salt. It came already prepared in tablets, from which a fresh solution could be quickly made, and was excellent for small surgical operations, and surgeons went so far as to say that they could amputate a leg without pain by using it. The tablets contained such a minute portion of cocaine that there was not the slightest danger of having any toxic cocaine effect. Some patients had a certain idiosyncrasy for cocaine, and in administering any considerable portion of the two-per-cent. solution one might get into serious trouble.

The President said that the injection of plain water into the tissues had a benumbing effect, and a physician had recently told him that he had done some operation in which he had excised a piece of bone, using no anæsthetic but hypodermic injections of plain water. In the use of cocaine the speaker had found that there was sometimes severe pain after the cocaine effects had passed off.

Dr. Wells said he had seen the Schleich solution used in many cases recently with brilliant results. A short time ago he had seen a tracheotomy performed with the Schleich solution, and apparently there had not been the slightest pain.

Dr. Johnson said that the only necessary thing was that the technique should be followed out implicitly, and one was certain to cause anæsthesia. The only objection to it was that there was a considerable amount of œdema of the parts after injection which interfered with the landmarks, especially when the skin was thin, as around the eyelid.

Dr. Taylor said that he had been intending to inject cocaine for an amputation of the finger, and by mistake had injected peroxide of hydrogen; the finger had swelled up, but there had been complete anæsthesia. It had been due probably to the separation of the nerve terminals by the gas that had been liberated.

Dr. A. Rupp said that he remembered that soon after Schleich had published his books, an eminent surgeon of this city had attempted to amputate a cancerous breast by this method so as not to hurt the woman with chloroform or ether, because she had been supposed to have a fatty heart; but the surgeon had made only a few initial cuts, and had found himself obliged to call for ether, and the operation had been successfully finished without any harm having resulted.

The President asked, if one could amputate a uterus with it, why one could not stop the pain by injecting it into the tissues.

Dr. Walker said that he had used cocaine on the cervix once, and the only pain complained of had been due to the dragging down of the uterus.

Dr. Rupp said that Dr. Chambers twenty years ago used to demonstrate to the house staff at Charity Hospital how insensitive to cutting and operative procedures the uterus itself was.

The President said that Agnew's *Surgery* mentioned a remedy for ingrowing toe nails—viz., cutting a cork to fit the toe nail, making it concavo-convex, and binding it upon the toe in such a way that the rounded edge would bear down upon the soft tissues separating them from the nail. The result was surprising. The speaker had used this treatment in the army, and it was wonderful how successful this simple manœuvre had been.

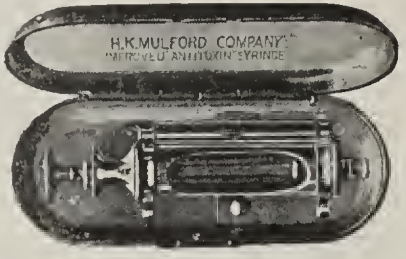
Dr. Andrews stated that, in regard to using cocaine, he had never had a case of poisoning with this amount, and thought there was less danger in a case of this kind where the toe was wired immediately after injecting cocaine than in an open operation. Anæsthesia from the use of cold water he thought was due to the pressure on the nerves. The pain after using cocaine he supposed was due to the condition; if one operated on any one of the several parts and left the parts practically at rest and there was no tension, he did not see why there should be pain.

New Inventions, etc.

THE MULFORD ANTITOXINE SYRINGE.

The five-cubic-centimetre syringe shown in the accompanying cut is described as having been specially designed for the injection of concentrated antitoxine. The case is of metal, nickel-plated, and is provided with a rack which is easily removed. This permits of thorough sterilization of the case, as well as of the syringe.

The plunger is expanded by simply turning the head of the piston rod, so that it may be adjusted at any point in the barrel. The instrument is made by the H. K. Mulford Company, Philadelphia and Chicago.



Miscellany.

The New York Board of Health and Tuberculous Disease.—The following preamble and resolution have been adopted by the medical board of the West Side German Dispensary:

Whereas, On January 11, 1897, representations were submitted to the health commissioners of New York by two officials in the health department which are inaccurate and misleading in several important particulars, and call for an unnecessary and dangerous extension of the powers of the health department, as follows:

1. That the statement embodied in the first paragraph of the report—namely, " that it is now the universal conviction that tuberculosis is a communicable disease," is not entirely correct and is not the opinion of many distinguished clinicians.

2. That, inasmuch as patients suffering from the various manifestations of tuberculosis who are treated at their homes by their family physicians, as well as those treated at dispensaries and hospitals, are under intelligent and judicious control, the time has not come for interference with such treatment by any department of this city.

3. That to grant the health board officials further powers than they now possess in regard to the removal of those subjects of tuberculosis whom they may regard as dangerous sources of infection would be an interference that would be alike humiliating to the physician and intolerable to the patient and his family.

4. That there is no proof that more patients affected with tuberculosis need hospital care than was formerly the case; that, even if such proof were forthcoming, there is no good reason why a special hospital for consumptives should be instituted; that the department of charities is amply provided with power to enlarge their present facilities and provide medical attendants of far greater experience than the members of the health board; that the health board possesses no remedies whatsoever, either prophylactic or curative, that are not within the reach of every practitioner of medicine.

5. That the convictions of the health department have little weight as against the opinion of the majority of the profession in regard to the dangers of contagion from tuberculosis; that the same may be said of the gratuitous and unsupported allegation that " the interests of the patient are more easily fostered, the risks of fresh contagion diminished, and the chances of recovery enhanced in hospitals for consumptives " ; and that an amendment to the sanitary code declaring that tuberculosis be officially considered a communicable disease would meet with the united and uncompromising resistance of the laity and the profession, as an arbitrary and unnecessary invasion of their rights and liberties.

6. " That all institutions in this city that admit and treat cases of pulmonary tuberculosis be subjected to a regular and systematic inspection by officials of the health board," etc., is an uncalled-for slur on the profession, the members of which are entirely capable of providing proper hygienic safeguards without the unasked-for assistance of the board of health.

7. That neither the number of cases of tuberculosis reported nor the tabulated deaths from tuberculosis give any index of the prevalence of the disease; for since the health department has undertaken to exercise surveillance over it, thereby interfering with practice, both public and private, and imposing unnecessary hardships upon those affected, the great majority of physicians now, in more than fifty per cent. of their cases, make no report to the board of health. In several large dispensaries a committee of this body, appointed for that purpose, found that tuberculous cases were not reported. The apparent diminution in the death-rate from tuberculosis is due to the facts that such reports tend to place a stigma upon the family and may invalidate insurance.

Therefore, be it *Resolved,* That a vigorous protest be submitted to the board of health commissioners against this unnecessary, harmful encroachment upon the domain of medical practice; and that it is recommended that in the future all far-reaching medical and sanitary measures be submitted to the Academy of Medicine and the county societies before adoption, so as to secure the necessary sanction of the medical profession; and, finally, that a copy of these resolutions be transmitted to the Academy of Medicine, the Medical Society of the County of New York, the New York County Medical Association, to his Honor the mayor, and to the president of the board of health.

[Signed.] { Thomas H. Manley, M. D.,
Louis Fischer, M. D., *Committee.*

The Use of Dilute Hydrofluoric Acid in Cystic Goitre.—In the *Indian Lancet* for February 1st there is an abstract of a paper by Dr. B. Ghosal which was read before a recent meeting of the Calcutta Medical Society. The author relates the history of a case in which hydrofluoric acid was used with successful results. In September, 1893, he was called to see a woman, forty-five years old, who was suffering from a tumor which had been growing for two years on the anterior aspect of the neck. There was dysphagia with slight dyspnœa. The tumor was situated on the left side of the throat and was of about the size of an orange. The skin over it was tense and shining; it was freely movable and blue veins crossed it. The larynx and the trachea were pushed to the right, and the œsophagus was pressed upon. There was a feeling of fluctuation. The patient was dyspeptic, but her general condition was fair.

The author advised an operation for the removal of the tumor, but this was objected to, so he put the patient on a treatment of potassium iodide and arsenic internally, and mercury iodide locally. This was continued for two weeks without any effect. The author then prescribed dilute hydrofluoric acid, ten minims, with three minims of Donovan's solution, three times a day after meals. After a week the tumor seemed less tense and smaller. The dose of hydrofluoric acid was gradually increased to half a drachm three times a day. At the end of two months the tumor was found to have diminished to the size of a small areca nut, and in two weeks more it had entirely disappeared.

The Treatment of Ulcer of the Leg.—Among the numerous modes of treatment which are employed, says a writer in the *Gazette hebdomadaire de médecine et de chirurgie* for February 21st, two are worthy of consideration, "cauterization" with tincture of aloes, recommended by M. V. Dehaine, and Unna's dressing, recommended by M. R. Aubouin.

The advantages to be derived from tincture of aloes, which is suitable in the treatment of deep, rebellious, and anfractuous ulcers with profuse suppuration, are that it hastens the formation of granulations and favors the formation of epidermis, and that, in consequence if its rapidly drying action, it is not necessary to renew the dressing frequently. The only inconvenience is a sharp, although temporary, pain caused by the application of the tincture. This treatment is contraindicated in very extensive circular ulcers, which are amenable only to surgical intervention. The mode of treatment is as follows: 1. Careful cleansing of the ulcerated surface with an antiseptic lotion. 2. Drying the ulcer with absorbent cotton. 3. Painting it with the tincture of aloes according to the following directions: If the ulcer is superficial, it is sufficient to pass the brush once over the affected spot; if it is deep, a second layer may be applied after the first has dried. These applications must be allowed to dry completely, so that the second dressing will not adhere to or detach the crust formed by the first. 4. Over the painted surface a piece of impermeable linen is placed, which insures contact with the alcoholic preparation and prevents the dressing from adhering to the crust. 5. The leg is wrapped entirely in aseptic gauze and cotton.

Very frequently, however, aside from the ulcer itself, the skin of the varicose limb is diseased; it easily becomes excoriated by the liquids secreted by the ulcer, it is eczematous, and it presents various troubles of nutrition. It is in these conditions that, apart from topical applications, such as aloes, Unna's dressing is indicated. In this way the skin is treated at the same time as the ulcer, and after cicatrization is obtained ulceration of the neighboring parts, which is usually seen with other modes of treatment, is rarely observed. The procedure is as follows:

After prolonged cleansing of the ulcer with hot water and soap, brushing with a rough piece of linen which has been rendered aseptic, and disinfection with an antiseptic liquid, the entire region invaded by the varicose eczema is covered with a thick layer of Lassar's paste, of which the following is the formula:

℞ Starch,
Zinc oxide, } each .... 300 grains;
Vaseline .... 600 "
M.

The ulcer is dusted with iodoform, aristol, or dermatol, and then covered with a layer of cotton. The entire leg is then painted with Unna's paste, which is melted and applied with a brush. The parts that are covered with Lassar's paste must also be coated with a layer of Unna's paste, which is composed of the following:

℞ Water,
Glycerin, } each .... 2.5 ounces;
Gelatin,
Zinc oxide, } each .... 300 grains.
M.

The leg is then bandaged with tarlatan which has been starched and soaked in hot water, and the bandage is drawn somewhat tight in order to make moderate compression. Over this a dry linen bandage is placed. At the end of from two to six days the secretion will pass through the dressing, which is then changed. A hot bath is sufficient to soften Unna's paste, after which a second dressing is applied.

Under the influence of this treatment the secretion dries up and the bandages are renewed only once in two weeks; the appearance of pus is the only indication for the renewal of the dressing.

When surgical treatment can not be employed the tincture of aloes is preferable as a topical application, especially in deep ulcers of medium size. At the same time, if the skin is eczematous, Unna's dressing is indicated, for it is a valuable adjuvant to the employment of topical agents of any kind, and it has the advantage of preventing a recurrence of the affection.

Influenza as a Factor in the Increase of Insanity in Ireland.—In the February number of the *Dublin Journal of Medical Science* Mr. T. S. M'Claughry states that he was prompted to the consideration of this subject from two causes—namely: He has not yet seen the works of any writers who lay much stress on influenza as a cause of insanity, with the exception of Dr. Clouston, of Edinburgh; secondly, judging from the number of patients admitted into the Maryborough District Lunatic Asylum, of which he is assistant medical officer, during the year 1894, the certified cause of their insanity being influenza, he concluded that, if there was even the same number admitted to other asylums in Ireland, this affection might justly be assigned as a cause for the increase of insanity. The author states that he wrote to all the medical superintendents in Ireland asking them if they believed that influenza was a cause, directly or indirectly, of an increase of insanity in Ireland. In the greater number of cases the answer received was "No," although some stated that they believed it was an exciting cause and factor, but to a very small degree. Mr. M'Claughry thinks that in all cases each superintendent based his answer and belief on his own experience and the number of patients admitted into each individual asylum. But, he continues, if the aggregate number admitted into these asylums during a year is taken, influenza will compare very favorably with some of the other causes which have been assigned as potent factors in the increase of insanity in Ireland. Outside of asylum circles, he says, there are other proofs that mental deterioration, if not insanity, has followed in the wake of this disease. He has been informed by physicians in private practice that they have met with several cases in which, after influenza, the patients have shown manifest symptoms of temporary insanity.

In regard to the ætiology of influenza, says the author, it has for the last few years absorbed the attention of many eminent men, and, according to the report of Dr. Parsons and Dr. Klein for the Local Government Board in 1893, there is now no doubt as to the existence of the *Bacillus influenzæ*. There is another point, he says, on which almost all physicians of the present age agree, and that is most interesting from a psychological point of view—viz., the great loss of volitional power and the terrible depression which follow, and, if there is in the patient attacked any hereditary taint which predominates over all other causes as predisposing, this lowering and depressing affection must indeed act as a very potent exciting cause.

Pressure Changes in the Skeleton.—To the March number of the *Edinburgh Medical Journal* Mr. W. Arbuthnot Lane contributes a long article on this subject in which he considers the influence of atmospheric pressure and the changes that result from conditions of subnormal pressure. Under certain chronic conditions, he says, the nasopharynx loses the mechanical influence exerted by the air as it is forced freely inward and outward through this passage, and in the growing child it does not develop normally. The lumen of the air-passage is smaller than normal, and the form of the face and mouth is altogether changed. The nose is compressed laterally and so also is the portion of the face immediately behind it. The malar bones are less prominent than they should be. The upper lip does not always cover the upper incisor teeth, and it occupies a plane considerably in front of the normal; it is also thicker and shorter than normal.

The anterior nares, continues Mr. Arbuthnot, are of a subnormal calibre, and do not show any change in form during the inspiratory process. The palate is very high and the loop formed by the alveoli is altered by the approximation of its sides and by the forward projection of its anterior convexity. This change has been looked upon by others as a result of the compression exerted by the cheek on the sides of the loop during mouth-breathing, but the author does not consider this a cause of the deformity, since it is evident, he says, that it is directly dependent upon the imperfect development of the nasopharynx, for if the nasopharynx is developed by systematic ventilation, the form of the face and of the palate returns to the normal type, and the alveolar loop opens out also. This can be accomplished only when the child is young.

This, Mr. Lane thinks, shows that by the removal of atmospheric pressure, which is primarily responsible for the form of this air space, other parts of the skeleton associated with it mechanically do not continue to develop normally, but retain an imperfect form. He shows that, if the normal function, or the mechanical factor which determines its development, is restored to this part, the nasopharynx and the structures dependent upon it will acquire their normal character more or less completely.

As an illustration of what he thinks should be the guiding principles in the study of the factors which determine the form of the nasopharynx, and through it of the face generally, he describes what seem to him to be fairly typical instances of the course taken by a common cold in different cases. He groups them as follows: The first comprises the vigorous active child who breathes freely with his chest, whose lungs are thoroughly well ventilated, and the vitality of whose tissues is considerable. The second comprises the child with an enfeebled vitality, who breathes only with the diaphragm. The third comprises those children who, besides possessing the habits of those in the second group, are affected with such results of malnutrition as are comprehended under the term rickets. In such cases, he says, the lumen of the nasopharynx is encroached upon by the increase in the thickness of the turbinated bones, the sæptum, and the other boundaries of this cavity.

With regard to the treatment of the infection of such a nasopharynx, the author urges the importance of the restoration of the boundaries of the space to their normal thickness, as it is evident that this can not be determined by a partial or complete removal of the pharyngeal tonsil.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 18th inst., Dr. C. A. Herter was to read a paper on Experimental and Pathological Observations on the Uræmic Intoxications, which was to be discussed by Dr. William H. Draper, Dr. A. Jacobi, Dr. William H. Thomson, Dr. A. H. Smith, Dr. W. B. James, Dr. W. G. Thompson, Dr. W. P. Northrup, Dr. Beverley Robinson, Dr. L. F. Bishop, Dr. J. C. Edgar, and Dr. Ira Van Gieson. A report of the committee appointed to investigate the subject of the health department in the charter of the Greater New York was to be presented.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 24th inst., Dr. Jonathan Wright will read a paper on The Pathology and Interrelation of Various Intranasal Manifestations of Chronic Inflammation, and Dr. J. W. Gleitsmann will exhibit Miculicz's glass cannulæ for laryngeal and tracheal stenosis. Patients will be presented and specimens exhibited.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 25th inst., Dr. Egbert H. Grandin will read a paper entitled Further Remarks on Septic Peritonitis, with Special Reference to the Antistreptococcus Serum. Cases will be reported, and instruments and specimens exhibited.

Blushing as a Sign of a Morbid Disposition.—In the *Indépendance médicale* for February 24th there is an abstract of an article from the *Obozïénié psychiatrii i névrologii* for December, 1896, in which M. Bekhtereff relates the two following cases, which are interesting from many points of view: The first patient stated that he had been the subject of a purely nervous affection for nine years; that when he mingled with people, or was even in the presence of only one person, with the exception of his parents and intimate friends, he blushed constantly. Sometimes the blushing was so intense as to cause a sensation of burning. He stated that it was not the effect of timidity; the blushing was not produced when the patient did not think of it; the cause was a purely nervous one. When he knew that the blushing could not be seen, for example, at twilight, he never blushed. When he became very much absorbed in the conversation of those around him, or his attention was closely drawn to something else, he did not blush. The patient was very much annoyed by this peculiarity and suggested that perhaps hypnotism might cure him. Temperature also exercised an influence on this symptom; when it was warm the patient blushed more easily than when it was cold.

Hypnotism was employed, but it had no effect whatever, and the author resorted simply to sedative treatment.

The other patient stated that he blushed very easily, especially when in the presence of other people, and that the trouble had become more and more frequent, and had such a psychical influence that he had lost all energy and all mental force.

It is beyond doubt, the author says, that in these cases blushing was the effect of a pathological anxiety. With regard to the pathogeny, it is evident that it is a question of irritation of the vasomotor centres of the cerebral cortex. In 1886 he published the result of his investigations on the influence of the cerebral cortex and the centres on the heart and on the blood pressure. The observations made at that time were to a certain degree the same as in those presented in the foregoing cases.

The Northwestern Dispensary.—The forty-fourth annual report of the Northwestern Dispensary shows that 39,862 patients were treated and 87,228 prescriptions filled at that institution during 1896. The managers call attention to the fact that medical services and medicine are alike free to those who are too poor to pay for them, and speak thus with regard to the intimate connection between the custom of other dispensaries of charging for medicine and the common abuse of medical charity:

"There is every reason to believe that the practice of charging ten cents for each prescription, which is pursued by all the other dispensaries, has caused many people to avail themselves of the benefits of these dispensaries who were able to pay for their medicines and medical attendance, but who believed that by paying the charge that was made they had a right to the benefits of these dispensaries, regarding them, as they perhaps had a right to do, as cheap drug stores, and not as free dispensaries. If all the dispensaries confined themselves to furnishing medicines and medical attendance gratuitously to persons who were unable to procure the same, as is done at the Northwestern Dispensary, it is believed that the complaint which is now being made by the medical societies and in the public press that dispensaries are furnishing medicines and medical attendance to persons who are amply able to pay for the same, would have no foundation in fact as to any of the dispensaries."

The Northwestern has demonstrated by a useful life of forty-four years that for a needed dispensary to exist it is not necessary to have the entire burden of charity rest on the shoulders of the doctors, or to make it a profitable source of revenue to an associated druggist, instrument-maker, or optician. Such means of attraction are doubtless necessary to maintain a large attendance at the many dispensaries for which there is no extual need, but the Northwestern has never gone on the principle that the number of applicants for relief must and should be maintained at any cost of pauperization and of unnecessary suffering on the part of the majority of the medical profession.

Agar Suppositories.—A writer in the *Pharmaceutical Review* for March states that Professor L. Lewin and Dr. Eschbaum have recently studied the methods of preparation and the action of various suppositories, and published their results in the *Deutsche medicinische Wochenschrift*, 1897, No. 2.

The requirements which a suppository should fulfill are, according to Professor Lewin, as follows: The medicament should be uniformly distributed throughout the mass and should free itself easily and rapidly from the vehicle. The suppository should be sterile, or nearly so; it should be easy of introduction, and should contain an exact dose of the incorporated medicament.

Experiments with cacao butter as a base showed that a uniform distribution of the medicament as well as an accurate dose of the same could only be accomplished by rubbing up the ingredients with the fat and subsequently rolling the mass into cylinders and dividing on a pill tile. The method of casting suppositories in molds, except where the medicament was soluble in the fat, never yielded an exact dose or uniform distribution throughout the suppository, as was proved by actual analysis. The use of suppository shells should of course, for the latter reason, never be practised.

Glycerin-gelatin suppositories, according to the authors, are preferable to cacao-butter suppositories in every respect. Not only can an exact dose be more readily attained with the former, but the suppositories can also be introduced with less difficulty, and the medicament is more easily absorbed than is the case with the latter. The objections, however, to these suppositories are that they are generally not sterile, that the gelatin employed often contains basic and other products that might be injurious to the human organism, and that the glycerin they contain might cause a local irritation of the intestine.

On this account, says the writer, Lewin and Eschbaum recommend the use of agar as a suppository base. Upon heating one part of commercial finely powdered agar for a few minutes on the water bath with twenty parts of water, a mass results which can easily be poured, but which upon cooling forms a slippery, elastic, tough, resistant mass.

Agar has an acid reaction; in the manufacture of the agar-gelatin it is neutralized by the addition of one part of sodium carbonate to a hundred parts of the powdered agar. The directions for the preparation of agar suppositories are given as follows: One part of neutralized agar is placed in a small prescription bottle together with the required quantity of the (water-soluble) medicament, twenty-nine parts of water are added, the mixture is shaken, the cork is tied firmly to the neck of the bottle, and the bottle is placed in boiling water and left there for from five to ten minutes. Pieces of paraffin paper, about four cubic centimetres square and rolled to form hollow cones, are best employed as molds. These can be placed in a light wooden frame upon a suitable balance and the required quantity of the hot agar mass poured into each. The suppositories are kept in the paper molds until required for use.

Some medicaments, such as mercurial ointment and bismuth subnitrate, can not be formed into suppositories by this method, but must be rubbed up with the agar mass. Antipyrine requires a larger proportion of agar than is indicated in the general formula, a mass of ten per cent. of antipyrine requiring twice, and one of fifty per cent. three times, this quantity. Tannin suppositories are prepared without the application of heat. One part of tannin and two parts of powdered agar are mixed and kneaded with seven parts of water; the mass is then rolled into cylinders and divided into the required number of parts. Almost all medicaments can readily be incorporated with the agar mass to form homogeneous mixtures. Vaginal suppositories and bougies can also be prepared with an agar mass by employing suitable molds. For the former, a wooden block with cavities of the desired shape and size is very convenient; the cavities are lined with parchment or wax paper, pressed into them by means of a suitable plunger.

A Peculiar Form of Calculus of the Kidney.—The *Gazette hebdomadaire de médecine et de chirurgie* for February 25th publishes a report of a recent meeting of the Société d'anatomie et de physiologie de Bordeaux at which M. Bégouin gave an account of the results of an autopsy which had been performed on a man who had died from urinary infection, on whom suprapubic cystotomy had been done.

The autopsy revealed an enormous bladder, the walls of which were very thick and could not be brought into contact with each other, thus forming a real cavity which, after death, was full of pus.

The right kidney was enormous and distended by a purulent liquid; following the course of the ureter, which was very thin, the author reached the region of the left kidney, where, instead of the kidney, he felt two hard bodies, one of which was of the size of a hen's egg, and the other of that of a nut. They were each inclosed in a thin fibrous capsule from which they were easily detached. There was no trace whatever of the kidney except these two fibrous capsules. The ureter was detached from them below, certainly proving that what remained of the secretory organ was there.

The larger calculus weighed sixteen hundred and seventy-five grains. Its outer surface was regular, but not smooth, and it was of a yellowish-white color. It was hard, but a certain elasticity was felt in the walls. When M. Bégouin attempted to cut the calculus it was somewhat crushed under the pressure. Through the fissure a liquid resembling dark-colored urine was discharged. The other calculus contained inspissated pus in which M. Sabrazés thought he discovered the *Bacillus coli.*

M. Bégouin called attention to the cavitary form of the calculus, if, he said, such a term could be applied to a shell of this kind, which contained liquid. It seemed to be composed of a precipitate of mineral salts on the inflamed mucous membrane of the pelvis of the kidney, and the shell thus formed must have surrounded the urine contained in the obliterated pelvis.

M. Auché thought that a microscopical examination was not sufficient to determine the presence of the *Bacillus coli* in the pus, but that it was necessary to make cultures.

A Procedure for Preventing Cloudiness on the Laryngeal Mirror without Heating it.—*Lyon médical* for February 21st states that this procedure, which M. Kiritein presented to the Berlin Medical Society (*Médecine moderne,* January 27, 1897), consists in covering the mirror with a small quantity of soft soap in such a way that the mirror remains bright. This soap absorbs the vapor from the water, so that no cloudiness is produced on the surface of the mirror. This procedure is applicable to the lenses of a microscope also.

The Physiological Action of the X Rays on the Central Nervous System.—The *Presse médicale* for February 24th states that Professor J. Tarkhanoff, after a series of experiments (*Gazetta Botkina,* 1896, No. 33–34), has reached the conclusion that the X rays, acting on the cerebral hemispheres of frogs, exercise a slight moderating influence on the centres of the voluntary movements and on the reflex activity of normal or decapitated frogs. The experiments were especially conclusive in frogs which had been previously subjected to the action of strychnine; these animals lived, but those which had been subjected to the action of strychnine and not to the action of the X rays afterward died.

M. Tarkhanoff has ascertained another interesting fact, which is that, after the frogs have been subjected to the rays and then put into water, the integument becomes very dark at the end of an hour or two; but after they have been exposed to the action of sunlight for several hours the skin regains its normal color.

A Sublimely Ridiculous Statement.—"'The sublime and the ridiculous,' says the *Medical Press and Circular,* 'seem to be curiously illustrated in the regulations, written and unwritten, which belong to the Royal College of Physicians, London.' Our contemporary then proceeds to state that no fellow or member of the college is permitted to publish anything on syphilis, understanding that 'only recently a fellow of the college was severely taken to task by the president for having so far offended against the traditions of the college as to publish an important communication upon the forbidden subject.' Were it not that the rest of the article is peppered over with such adjectives as 'grandmotherly,' 'narrow,' 'illiberal,' 'fatuous,' and 'ignoble,' we should have supposed the *Medical Press and Circular* to be poking fun at the profession. But thus to abuse the college on false grounds would be carrying fun to such an indecent length that we are forced to believe that our contemporary has been made the victim of a hoax by one of its contributors. If so, the hoax is all the more cruelly opportune because on Tuesday last the Royal College of Physicians of London appointed a strong committee to inquire into the working of the Contagious Diseases Acts in India, and a knowledge of syphilis will be expected of each gentleman selected to serve. The present president of the college has sat on two such commissions previously, and, as a further reason why Dr. Wilks should not 'take seriously to task' any fellow or member of the college for dealing with the subject, we may remind our readers that he himself published a lecture on syphilis—and a very admirable discourse, too—in our columns in 1867. This lecture was delivered to the students of Guy's Hospital, and the very first sentence lays down the obvious truth that constitutional syphilis must be regarded as, 'strictly speaking, a medical disease.' How does the *Medical Press and Circular* think that diseases of the nervous system, for instance, are to be treated if the subject of syphilis may not be mentioned by the physician? We hope that our contemporary will see the fitness of expressing some regret for its misapplied abuse of the Royal College of Physicians of London."—*Lancet.*

A Scandal in Connection with the Kneipp Cure.—The Berlin correspondent of the *British Medical Journal* says: "A scandalous state of things in the management of Pfarrer Kneipp's establishment at Wörishofen has been disclosed by a lawsuit brought against one of the male nurses there by the parents of a former patient. The patient, it appears, was a weakminded young girl with a leaning to nymphomania. She had previously been placed in an asylum, but her parents had removed her from it and brought her to Kneipp's establishment, 'confiding in the sanctity of the place.' It seems almost incredible that the night nurse allotted to this poor half-witted creature was a young man; yet such is the fact. For eight or nine nights she was left alone with him, until one night, when he apparently ill-treated her, her screams brought in another male nurse, to whom the first one then resigned his charge. After some months the poor girl left Wörishofen, and in due time gave birth to a child."

Spurious Coca Wines.—The *British Medical Journal,* in its issue for January 23d and again in that for February 6th, speaks of the dangers that attend the popular use of so-called coca wine—that is, some kind of wine in which a salt of cocaine is dissolved. For the most part, the wine is of poor quality, but sweetened and highly fortified with rectified spirit. The amount of cocaine contained in many of these products is variable, too, and in prescribing them one really does not know what doses of that drug he is ordering. Moreover, the contention seems reasonable that the tonic and stimulant virtues of a real wine of coca—such, for example, as the well-known vin Mariani—do not depend altogether upon the cocaine contained in it.

THE NEW YORK MEDICAL JOURNAL, MARCH 27, 1897.

Original Communications.

ELECTRO-CAUTERY AS A HÆMOSTATIC.

By ALEXANDER J. C. SKENE, M. D., LL. D.,
BROOKLYN.

NEARLY twenty years ago I learned from Dr. Thomas Keith his method of treating the pedicle, in ovariotomy, by the clamp and cautery, and I have had ample opportunities to observe that the results are vastly superior to those obtained by any other method. Within the past three years I have discovered that the same method of closing bleeding vessels is applicable in all surgical operations. At the same time I have found that it is no easy matter to use the means which give such excellent results. Naturally, this inclined me to seek some simpler, easier way of accomplishing the same object—that is, to arrest bleeding in surgical operation. Hitherto the difficulty in using compression and heat to arrest hæmorrhage occurred in the management of the heat element.

The process is as follows: A portion of the end of the vessel, or mass of tissue containing bleeding vessels, is seized in a forceps or clamp and firmly compressed, and while under pressure heat is applied to the instrument to desiccate or dry the parts but not to char them. In this way the walls of the arteries become united and hæmorrhage is certainly prevented. Heretofore the heat was obtained by applying a heavy cautery iron (heated in the fire) to one side of the clamp, but this rendered the procedure difficult and unsatisfactory and limited it to the treatment of the pedicle in ovariotomy.

With the determination of improving the process and adapting it to the arrest of hæmorrhage in all surgical operations, I employed electricity to produce the required heat and devised instruments to meet all requirements. Now I have perfected the method so that I believe it to be worthy of the attention of the medical profession.

The advantages which may be fairly claimed for this way of controlling bleeding in surgery are, that it is certain and reliable in closing isolated vessels or those imbedded in masses of tissue, like an ovarian tumor pedicle for example. At the same time that bleeding is arrested all lymphatics are sealed up, which prevents septic absorption. Nerves that accompany the vessels are immediately and completely devitalized, and hence there is less pain and irritation in the stump. The heat employed sterilizes the parts involved, and therefore the operation is perfectly aseptic. Of these many advantages, the greatest, I believe, is that it leaves the stump of a pedicle or the end of an artery in a condition requiring the least reparatory care, so that recovery is more prompt and uneventful. My impression is that the ends of vessels and tissues of pedicles treated in this way become first hydrated and then organized (during the healing process), in the same way that an inflammatory exudate upon a serous membrane becomes vitalized. I asked Dr. Keith about this. He said that he did not know exactly what became of the stump of the pedicle treated in his way, but he did know very surely that it gave no trouble or anxiety to patients or the surgeon. In this my experience fully agrees with his. I have never known trouble of any kind to occur after an operation that could be attributed to this method of controlling hæmorrhage. No such results can be obtained with the ligature. Even the modern ligature, that is (with much care and trouble made) aseptic and can be left in the tissues, has its faults and shortcomings. The catgut ligature is very difficult to sterilize and keep surgically clean, and it is liable to slip and permit hæmorrhage. In being disposed of by absorption, or being walled in or encysted, it causes more or less irritation. Dead animal tissue, though sterile, can not be taken care of in a wound without causing some disturbance.

Silk, or unspun silk, called silkworm gut, properly prepared, will not decompose, and being less likely than catgut to slip has some advantages, but is more objectionable still because it causes irritation, and in the effort to escape or be thrown out enters the abdominal or pelvic viscera and does great damage. There are many cases recorded of serious trouble from ligatures of this kind long after recovery from operations.

Although fully satisfied with the results obtained by compression and heat as a hæmostatic, I have long been annoyed by the practical difficulties in its employment, as already stated. While thinking of how to overcome these difficulties, my attention was called to the use of electricity in cooking and heating laundry smoothing irons. It then occurred to me to adapt the same heating power to surgical instruments, such as the clamp and forceps.

My requirements in this regard were explained to Louis M. Pignolet, an electrician who had given much attention to electricity as used in medicine and surgery. He at once took up the study of the subject with enthusiasm and soon produced the instruments and appliances required. He first made an artery forceps, then a clamp, and finally a full set of compression forceps. I should say he adapted the system of electric heating to these instruments, which enabled me to employ the method to the control of bleeding in all surgical operations.

The following is Mr. Pignolet's description and illustrations of the instruments in question:

"The artery forceps, as shown in Fig. 1, is provided with two thin and narrow platinum plates which cross the inner sides of the blades at their distal ends and are heated by an electric current conveyed to them through copper wires. One plate is attached to each blade as close to its end as possible, so that when the forceps is closed the plates coincide with each other. The plates are insulated from the forceps by pieces of

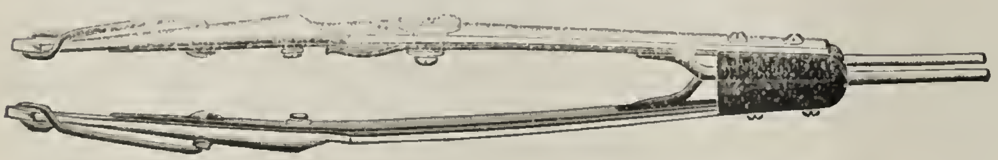


FIG. 1.

mica, and one end of each passes around the edge of the forceps blade and is fastened to its side. The other end of the plate passes around the opposite edge without touching the blade and connects with a thick copper wire, which is insulated from the forceps and extends along the top of the blade for about a third of its length. At this point the wire passes through an insulating bushing in the blade and connects with an insulated strip of sheet copper running beneath the blade to the end of the forceps. The blades are electrically connected together at the end of the forceps, but an intervening piece of hard rubber insulates the copper strip on one blade from that on the other. Terminals are fixed to the ends of the copper strips for making connection with flexible conductors for conveying the electrical current to the forceps. When the terminals are connected to a suitable source of electricity the current flows along one of the copper strips and its wire to one of the platinum plates, thence through the plate to the forceps, and thus to the other platinum plate, returning through the remaining copper strip and wire. The current is turned off and on by a switch on the forceps operated by sliding a knob."

In perfecting the compression forceps and clamp, which were constructed subsequently to the artery forceps, the discovery was made that it was only necessary to have the heating surface on one side. Therefore the artery forceps may be constructed with but one platinum plate on one of the blades only.

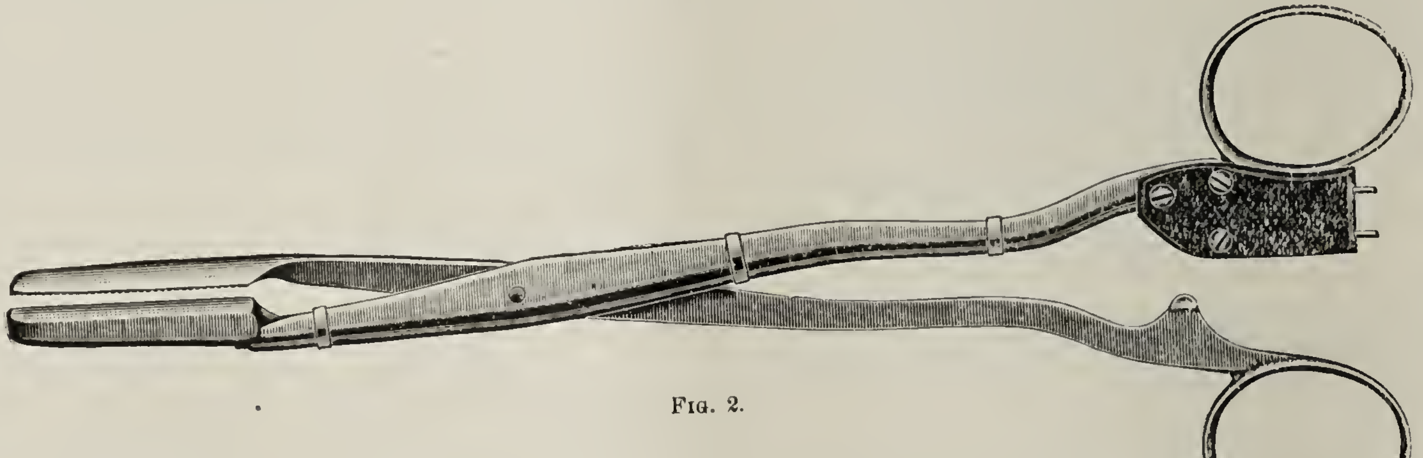


FIG. 2.

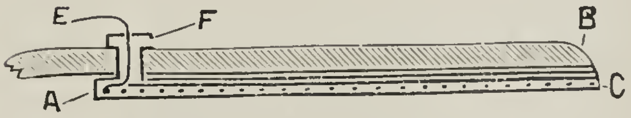


FIG. 3.

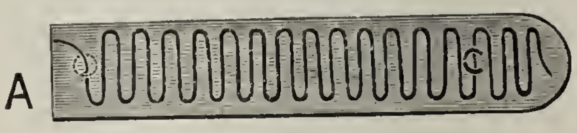


FIG. 4.

The method of heating the artery forceps, though simple, is not applicable to larger instruments like the compression forceps described below; therefore, a different method is employed for such a forceps, which is heated by the passage of an electric current through a wire of suitable resistance inclosed in a water-tight chamber in one of the jaws of the instrument.

The construction is plainly shown by the illustrations, of which Fig. 2 is a side view of the forceps, Fig. 3 is a section of the jaw on an enlarged scale, and Fig. 4 is a top view of the chamber in the jaw, also on an enlarged scale, showing the arrangement of the heating wire. The chamber is formed by attaching a flat case (A) of sheet metal to the inner side of one of the jaws (B) of an ordinary compression forceps, in such a manner as to form a water-tight chamber. This increases the size of the jaw but little, as the case is less than an eighth of an inch deep and has the same length and width as the jaw, so that the instrument appears like an ordinary compression forceps.

The wire (C) for heating the sheet metal face of the jaw is of platinum or other suitable metal, and zigzags back and forth from side to side in passing through the chamber. A fireproof material, which is also an electrical insulator, separates and insulates the wire from the sides of the chamber. The space between the wire and the back of the chamber is several times greater than that between the wire and the front, so that the heat from the wire can pass much more easily to the front than to the back. One end of the wire is electrically connected to the instrument and the other to a copper wire, E, passing out of the chamber through an insulating bushing, F, in the back of the jaw. The copper wire extends back to the handle of the instrument and is insulated by a waterproof covering. Terminals are provided at the end of the copper wire and the handle of the forceps for making connection with the flexible wires or cables which convey the electric current to the instrument. The path of the current is through the copper wire, the wire in the chamber, and one blade of the forceps. The copper wire and the blade present but little resistance to the electricity and are but slightly (if appreciably) heated by the passage of the current. On the other hand, the wire in the chamber offers considerable resistance to the current and is heated by it to a greater or less degree, according to the strength of the current and the resistance of the wire.

By this method of construction the heat is concentrated upon the inner surface of the jaw of the forceps or clamp—the mechanism of which remains precisely the same—and but little is expended uselessly in heating the other parts of the instrument. The electrical energy necessary for heating the jaw is therefore reduced to the smallest possible quantity, and varies from ten to thirty watts, according to the size of the forceps.

The required degree of heat, which varies from 170° to 190° F., is attained very quickly, owing to the closeness of the heating wire to the face of the jaw and the thinness of the sheet metal composing the face. Another advantage is the even distribution of the heat over the face of the jaw, owing to the many zigzags of the heating wire. Furthermore, as the chamber is water-tight, the instrument can be cleansed in an antiseptic solution without damage.

On this principle forceps of various shapes, from the largest to the smallest sizes, can be heated, as the general formation of the instruments is not modified by the heating attachments. Artery forceps have also been heated in the same way.

The current can be switched on and off by a switch mounted on the instrument or located in the circuit leading to it.

The method of construction described is advantageous, for it simplifies the instrument by dispensing with the extra copper wire that would be required if one end of the heating wire were not connected to the forceps; but if desired the heating wire may be connected to a second insulated copper wire so that no current would flow through the blades of the forceps.

As the forceps requires less electrical energy than the average cautery electrode, the current from a small storage battery or a suitable primary battery, such as the excellent battery of Dr. Byrne, can be used for heating it, but the current from electric-light mains is preferable, as it is not subject to failure, and the care and attention necessary to keep a battery in working order are avoided. The strength of the current can be easily regulated to suit any forceps by means of a small rheostat.

Alternating current of the pressure used for lighting buildings can be converted into a current of lower pressure adapted for the forceps, as well as cautery knives and examining lamps, by means of a small transformer capable of giving currents of different strengths and pressures. This can be accomplished by a switch, by which a part of the turns of the wire composing the secondary of the transformer can be cut in or out of circuit a few at a time to avoid considerable changes of current strength in moving the switch from one point to another.

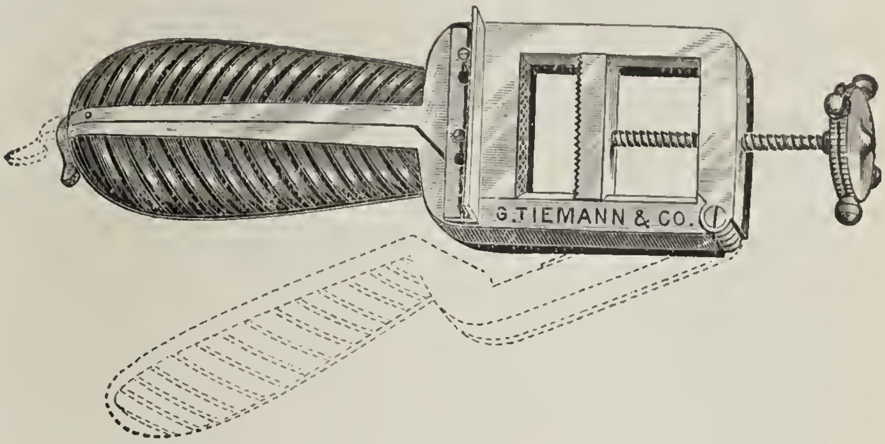


FIG. 5.

When the current from the lighting mains is continuous instead of alternating, it can be converted into alternating current for operating transformers like those described, by means of a small dynamomotor.

In the treatment of the pedicle of ovarian tumors I employ the improved clamp invented by me a number of years ago (see Fig. 5), with the electrical heating attachment. The clamp compresses the pedicle on four sides. The long blades keep the tissues from spreading, while the short, sliding blade presses the tissues against the other cross-bar. The advantage of this is that the pressure upon the pedicle is equal at all points, and it thereby gives a smaller stump. The trouble with the old straight clamp is that it spreads out the pedicle too much, and while it firmly holds the central or thickest part, the outer edges are liable to slip out of its grasp.

A more detailed description of my experience with the method may now be given.

In the management of the instruments the heating power should be tested before beginning to operate. The amount of heat required varies, of course, according to the instrument used and the size of the artery or pedicle to be treated. The adjusting of the current requires a knowledge of the source of the power—that is, the management of the current as obtained from the electric-light mains, storage battery, or the Byrne primary battery. These sources of the electric currents are familiar to surgeons, so that a very little practice will suffice to master this part. In ovariotomy the clamp should be attached to the electric power and heated to the required degree in order to ascertain that the appliances are all in good order. If possible, the clamp should be applied to the pedicle and moderately tightened before separating the tumor, and in dividing the pedicle a portion should be left projecting beyond the clamp to provide against slipping. When the current is turned on, and as the tissues shrink from the heat, the clamp should be tightened more.

Before removing the clamp, and while the current is still going, the clamp should be loosened a trifle, and the portion of tissue projecting beyond the clamp cut off. This permits the clamp to slip off without pulling the pedicle apart. The tissues may stick to the jaws of the clamp, and if they are opened too far the compressed desiccated portion may be pulled apart and start bleeding—hence the necessity of removing the clamp as directed. In order to prevent the pedicle from falling into the abdomen when the clamp is removed, it should be seized on one or both sides with forceps and held in view for inspection and further treatment if necessary. If the treatment has not been sufficient the blood will be seen forcing its way along the artery, advancing a little with each pulsation. In that event the clamp should be reapplied and the current turned on to complete the desiccation. There is no time lost in making this inspection of the stump, because it gives time for the heated parts to cool down so that the stump can be safely dropped back into the abdominal cavity. This description of the use of the clamp and cautery in ovariotomy is about the same as that given to me by Keith, excepting the use of the electricity for heating.

Vaginal hysterectomy offers superior opportunities for this method of arresting hæmorrhage. I have tried every known method of doing this operation and found them all objectionable, and so I was led to do the operation as follows:

The vagina is divided all round the cervix uteri with the cautery knife. The bladder is separated from the uterus and the peritonæum opened in front and behind in the usual way. The lower portion of the broad ligament is then seized with the compression forceps as close to the uterus as possible and the heat turned on. The compression is increased while the heat is being applied. A little practice is needed in order to know the degree of heat that is being used and the length of time that it should be continued. When one is doubtful about this the forceps may be removed and the parts inspected, and if need be the forceps should be reapplied and the heat continued long enough to obtain the desired effect. The ligament is divided with knife or scissors between the forceps and the uterus as far up as the vessels have been closed. The lower portion of the ligament on the other side is treated in the same way. The uterus is drawn down and the remaining portions of the ligaments are treated in sections until the uterus is completely made free. The operation may be briefly described by saying that it is performed in the same way as when forceps are used to control the bleeding, with the difference that instead of leaving the forceps on long enough for the compression alone to arrest the hæmorrhage the heat completes the hæmostasis and the forceps are removed at once.

In controlling hæmorrhage from small arteries my observations have been limited to such operations as amputation of the mammary gland and small vessels in divided adhesions in abdominal operations. The forceps is in form the same as the ordinary artery forceps, and is used in the same way. The artery is seized and held firmly, and the electrical connection made and continued until the end of the compressed vessel is desiccated.

This takes very little more time than applying a ligature; in fact, it takes less time when the vessel is in a deep cavity and not easy to get at. In the management of small bleeding vessels in the abdomen or down in the pelvic cavity this electrically heated forceps is very useful and convenient, and saves much time, trouble, and anxiety.

Up to the present time I have not practised this method of controlling the hæmorrhage in doing abdominal hysterectomy, but I am confident that it can be employed satisfactorily in that operation.

The following cases reported from my clinic by Dr. Todd are given as illustrative of this method of controlling hæmorrhage:

CASE I.—Miss M., aged fifty-four years, native of the United States. Ten months ago she noticed a small nodule in the left breast which grew rapidly and became very painful. She lost flesh, became anæmic and cachectic, and lately had noticed a swelling in the left axilla.

Diagnosis.—Malignant disease of the left breast, with axillary involvement.

Treatment.—Field of operation prepared in the usual way and the usual incision made. Hæmorrhage was free, but was quickly and easily controlled, the method being as follows: All bleeding points were seized with the hæmostatic forceps; a forceps was then connected with the battery and current turned on until the desired desiccation was obtained; this was continued for from half a minute to a minute, depending upon the size of the vessel; then the next forceps was similarly connected, the former remaining *in situ*, thereby gaining the greatest hæmostatic power without loss of time. The axillary glands were removed and the hæmorrhage controlled in the same way. The wound was closed with waxed silk and dressed with carbolized gauze (carbolic acid, one part; glycerin, eight parts). Time consumed in operation, thirty minutes. Convalescence rapid and progressive. Highest temperature, 100.4° F. right after operation; the following morning, 100° F.; from that time below 99.2° F.

No anodyne was necessary during recovery. Morphine sulphate, an eighth of a grain, atropine sulphate, one two-hundredth of a grain, were given hypodermically before consciousness was gained after ether, as is our custom, to allay restlessness. Sutures removed on seventh day; union perfect. Sat up on eighth day and left for home in three weeks.

CASE II.—Entered L. I. C. Hospital, September 21, 1896. D. G., native of Norway and single, began to menstruate at thirteen years and regular. Ten months ago came to this country; had amenorrhœa for three months, then menstruated with severe pain for one day; since then menses have been normal.

One month prior to admission was seized with severe pain in the left ovarian region, which gradually extended to the right and across the back. At this time there was a profuse yellowish discharge from the vagina, together with painful and frequent micturition.

Diagnosis.—Pyosalpinx (double).

Treatment.—September 27, 1896, abdomen was opened, the ovaries and tubes were freed from adhesions, and the broad ligament pedicle on either side seized with the long compression forceps, current turned on, and continued for two minutes and a half. The tube and ovary were amputated, when hæmostatic forceps were removed and there was no hæmorrhage. A number of bleeding points deep down in the pelvis were treated by the method in question. Abdomen was closed with silk. Time consumed in operation, twenty-five minutes.

Convalescence progressive and uneventful. Temperature on third day, 100.5° F.; pulse, 102. This was the highest temperature until the sixteenth day, when it was 102° F.; the next morning it was down to normal. Cause of rise unknown. Sutures removed on the eighth day; primary union.

Left hospital three weeks after operation.

Case III.—Entered L. I. C. Hospital, giving following history: Thirty years of age, married five years, never been pregnant. Menses began at thirteen years, regular, flow lasting three days, and profuse.

Three months ago she noticed a profuse yellowish and slightly blood-tinged discharge from the vagina, accompanied by painful and frequent micturition. One week prior to admittance she was seized with a sharp pain in both ovarian regions, which continued up to time of operation.

Diagnosis.—Double pyosalpinx.

Treatment.—The operative technique of this case was similar in all respects to that of the former one. Highest temperature, 100° F.; pulse, 94. This was on the seventh day, the day upon which the sutures were removed; thereafter it was below 100° F. Primary union was obtained in the wound, and the patient left the hospital on the twentieth day after operation.

Case IV.—Mrs. E., aged forty-three years, native of the United States. Married eighteen years, four children, no miscarriages. Menses began at fifteen, and she has always been regular in all respects. She came to hospital stating that five years previous she fell from a ladder and since then she has had backache, pelvic tenesmus, and frequent and difficult urination. Also complained of a mass protruding from the vulva, which made locomotion difficult and painful. Diagnosis of complete procidentia was made. The uterus was about six inches in length, cervix eroded from contact with clothing, and the ligaments infiltrated and thickened. Vaginal hysterectomy was decided upon. Patient anæsthetized and in the lithotomy position. Uterus was seized with a double tenaculum, and the anterior and posterior vaginal walls were opened with serrated scissors, all bleeding points being controlled with the cautery, as previously described; then the broad ligaments were seized in the grasp of the large forceps and connected, two minutes and a half being allowed for mummification; then they were removed, care being taken not to tear open the edges in doing so; ordinary clamps applied to the uterine side and uterus amputated. Hæmorrhage was completely controlled. Suturing the anterior and posterior walls to the peritonæum and packing cavity with gauze completed the operation.

During convalescence she was entirely free from pain, and urinated voluntarily after the first twenty-four hours. Bowels moved on third day. Vaginal discharge was absent on tenth day. Temperature never rose above 99.5° F., and patient left in three weeks.

SERO-DIAGNOSIS OF TYPHOID FEVER.*

A STUDY OF ITS PRACTICAL CLINICAL VALUE, WITH A DEMONSTRATION OF THE BLOOD REACTIONS.

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Six months have now passed since Widal first proposed and described a new method of diagnosticating typhoid fever by means of an examination of the blood. During this period many clinicians and bacteriologists have repeated Widal's observations, and their published reports, so far as I have seen them, have all confirmed his conclusions as to the value and accuracy of the serum test. Early in November last the subject was brought to the attention of the physicians of New York by the action of the board of health, who offered to examine the blood of all cases of suspected typhoid fever occurring in either private or hospital practice in the city. Having at that time a number of cases of the disease in my service at Bellevue Hospital, I thought it an excellent opportunity to study the new test, especially as I had the aid of a zealous and most efficient house staff, that *sine qua non* of all good hospital work. Indeed, if I remember rightly, it was at the suggestion of Dr. Humphreys, the house physician of the first medical division, that we decided to provide ourselves with the apparatus and broth cultures necessary to performing the test ourselves. At the same time, we availed ourselves freely of the assistance so kindly offered by the bacteriologists of the health department. Careful records were kept of our investigations, as it was my intention at the time to present a report of our work to this society. In order that the principles underlying the test may be fully appreciated, I shall also give a short account of the experimental observations which paved the way for the discovery of Widal, as well as some consideration of the nature of the substances in the serum which produce the reaction.

Chantemesse and Widal were among the first experimenters in this field. In 1888 they succeeded in immunizing animals against the typhoid bacillus by injecting them with sterilized cultures of that bacillus. These observers found later (in 1892) that the same result could be accomplished by means of the serum of patients suffering from typhoid fever or convalescing from that disease. Then followed the observations of Pfeiffer and Kolle, who showed that the serum of typhoid convalescents or the serum of immunized animals, when injected into the peritoneal cavity of guinea-pigs at the same time with a virulent culture of the typhoid bacillus, had the property of immobilizing, agglutinating, and rapidly disintegrating the bacilli in the serous fluid. This reaction is generally known as "Pfeiffer's phenomenon" or reaction. The same serum, injected in like manner with cultures of the colon bacillus, had no such effect, the bacilli remaining isolated and motile. Later, Gruber and Durham observed the same immobilizing and agglutinating action upon typhoid bacilli outside the animal body, the mixture being made *in vitro*. There was no action upon the colon bacillus in any of its varieties. Again, Pfeiffer and Kolle showed that if the serum of immunized animals was added to bouillon in certain proportions, and the bouillon was then sown with typhoid bacilli, there resulted, after twenty-four hours, a clear fluid with the bacilli precipitated at the bottom of the tube collected into small clumps. Colon bacilli, sown in the same bouillon, caused the usual clouding and preserved their motility. Pfeiffer and Kolle therefore recommended this procedure as a means of distinguishing between the typhoid and the colon bacilli. Widal carried these last observations one step farther, and found that the serum of typhoid patients had on cultures of the typhoid bacillus the same agglutinating action as the serum of animals immunized against typhoid fever. The serum of healthy individuals, on the other hand, or of persons suffering from diseases other than typhoid fever, had no such property. Having arrived at this point, Widal had only to reverse the terms of the problem and ascertain how the blood serum of a given individual acted upon a culture of the typhoid bacillus. If the addition of the serum produced immobilization and clumping of the bacilli in the culture, the individual had typhoid fever or had recently recovered from the disease. If the bacilli were unaffected, typhoid fever could be eliminated from further consideration.

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* Read before the Society of Alumni of Bellevue Hospital, January 6, 1897.

The nature of the agglutinating substances in the serum is an interesting subject of speculation and study. It appears that various fluids and secretions of the body possess the agglutinating power to a greater or less degree. It is very marked in the fluid of blisters. It has been found in the tears, also in the fluid of the pericardium, peritonæum, and pleura. It is sometimes present in the urine, but not constantly. The action was very marked in the milk of a nursing woman suffering from typhoid, but was not found in the blood of the infant nursed by the woman. The aqueous humor of immunized rabbits gave the reaction in five cases out of nine. Experiments by Widal seem to show that the power is exerted by the fibrinogen and globulin of the blood, but is wanting in the albumin. On analyzing the milk of immunized goats, the power was found in the lactoglobulin, also in the casein, but was absent in the lactalbumin. Removal of the albuminoid substances, fibrinogen, globulin, and casein, from the body fluids of a case of typhoid fever, removes the agglutinating power from those fluids. According to Pfeiffer, the agglutinating substances are not antitoxines, but are bactericidal bodies, of the nature of ferments, in active and inactive form in the serum. Nothing is known as to the origin of the bactericidal substances, but Pfeiffer maintains that the leucocytes have no part in the process. Other observers have shown that if the immunizing serum be heated to a certain temperature it loses its bactericidal action without losing its power of agglutinating the typhoid bacilli. It is evident, therefore, that this special reaction is not dependent on the bactericidal property of the serum, but is due apparently to the presence of so-called protective bodies, and it is generally accepted that these protective bodies, the alexines of Buchner, are present to a greater or less extent in normal blood serum. Gruber not only believes that protective bodies are found in normal serum, but maintains that these bodies are the direct agents in killing the bacteria which enter the body. In his opinion, the specific substances which result from immunization simply aid the bactericidal action by destroying the outer covering of the bacteria, thus laying them open to the attack of the alexines of the normal body. Pfeiffer also, early in his experiments, found that normal human serum, in doses of three to eight decigrammes, exerted a protective action in guinea-pigs of three hundred grammes weight, counteracting the effect of a fatal dose of typhoid bacilli. He holds, however, that the protective action of normal serum and that of serum from typhoid convalescents are not the same; the former simply immobilizes the bacilli and prevents their increase, if given in adequate dose; the latter destroys the bacilli by causing their dissolution or disintegration. There is, therefore, a qualitative as well as a quantitative difference in their action. It is evident from the foregoing statements of various observers that normal blood serum contains substances which act strongly upon bacteria when the latter are introduced into the body. In the case of the typhoid bacillus they are able to at least hinder its growth and activity, if not to destroy it. It remains to be seen whether this action is ever exerted outside the body when the serum and the bacillary culture are brought together in certain proportions.

Before proceeding to recount our own experiments I must refer to some recent observations of Courmont's, as they go to prove that the Pfeiffer phenomenon or reaction is not of universal application. Courmont experimented with the serum of nine typhoid patients and found that it invariably gave a positive reaction with cultures of the typhoid bacillus; but it also reacted with the colon bacillus, sometimes very markedly. It also gave a distinct reaction with cultures of the Loeffler bacillus and of the *Staphylococcus pyogenes aureus*, but did not affect the *Bacillus pyocyaneus* or the *Streptococcus pyogenes*. The serum of patients affected with diseases other than typhoid fever had no action on the typhoid bacillus. Courmont therefore concludes that a culture of the typhoid bacillus can be used to determine whether or not a given specimen of blood has been taken from a patient suffering or convalescing from typhoid fever—the test of Widal—but he also believes that the fact that the serum of a typhoid patient reacts upon a given bacillus does not prove that the latter is the bacillus of typhoid.

There are various ways of performing the test of Widal, but the principle is the same in all. As already indicated, the test consists in adding human blood serum in certain proportions to a recent culture of the typhoid bacillus, and noting the effect upon the motility and arrangement of the bacilli in the mixed fluid. The culture * should be only eighteen to twenty hours old in order to get the best results, the bacilli then being in active motion and the broth free from clumps. When sufficient fresh blood can be obtained to give pure serum for the test, the mixing proportions should be one part of serum to ten of the culture fluid. When dried blood is used, one part of serum to three or four parts of culture gives the best results, in my experience. Whatever proportion is adopted should be adhered to, in order that the resulting reactions may always have the same significance. In most of my work I have used dried blood taken from the finger with aseptic precautions. In two cases marked reactions were obtained from the fluid of blisters. The drop of dried blood should be dissolved with a drop of sterilized water, and the fibrin and coloring matter allowed to settle. With a platinum-wire loop four small drops of the culture are placed upon a clean cover glass which has just been passed through the flame. One drop of the clear upper layer of blood serum is then taken and mixed with three of the drops of culture, the fourth drop being left as a control. The cover glass is then inverted over the hollow cell of a glass slide and sealed with oil or vaseline. The hanging drop may then be studied with a quarter or one sixth objective. I regard it as important to have a control drop on each cover glass side by side with the specimen. It is often desirable or necessary in cases of slow or doubtful reaction to turn to the drop of pure culture and see what changes are taking place there. The method of using dried blood and then redissolving it with water necessarily gives a serum of very uncertain strength. In the majority of cases the reaction is so clearly positive or negative that this rough method answers our purpose. In all doubtful cases, however, I should recommend the use of a blister. The blister fluid can be aspirated in small glass capillary tubes and obtained pure and then diluted to any required strength. Its freedom from fibrin and blood coloring matter is also an advantage. The blister can be made with cantharidal collodion or plaster and causes but trifling pain, as I can state from personal experiment.

The reactions which are observed in the mixture of serum and culture are generally described as either positive or negative, but, in my opinion, a considerable proportion can only be called "doubtful" or "partial." When most of the bacilli are immobilized and formed into clumps within five or twenty or thirty minutes, and the others have either lost their motility or retain simply a sluggish, uncertain movement, the reaction is properly classed as positive, or marked, or typical typhoid. On the other hand, if the activity of the bacilli persists and there is no clumping whatever, the reaction is naturally negative. But in many cases the motility of some of the bacilli is impaired while others remain active. There may also be some loose clumps, but the bacilli forming the clumps may still be in motion. It is, therefore, often impossible to call the reaction anything more than "doubtful." I shall have occasion this evening to describe actual instances of these various forms of reactions, and they will also be demonstrated under the microscope.

The cases forming the subject of our experiments may be divided into three groups. The first and second groups comprise cases which had been under my own observation or with whose clinical history I was familiar before the examination of the blood was made. The third group is made up of cases of which I knew nothing at the time the specimens of blood were sent to me.

In Group I are included fourteen cases of individuals suffering from typhoid fever or recently convalescent from the disease. In nine of the cases the blood was tested during the active period of the disease, in one case as early as the eighth day. The reaction was marked in all but one of the nine cases. The case which gave the reaction on the eighth day was a striking instance of the value of the test. The patient was a boy twelve years of age, who had been ill for a week with fever, cough, malaise, pain, and stiffness in the muscles of the neck, and slight diarrhœa, which had been apparently excited by a laxative given at the beginning of his illness. I was called to see him at his home in a tenement house. He had a temperature of 101°, a slight cough, and the signs of bronchopneumonia of the right side, but complained principally of the pain in the neck. There were no rose spots, but I thought I could feel the spleen. I examined some of his blood, and the reaction was so marked that I had him sent at once to the hospital. His disease proved to be typhoid of a rather mild type, and the blood gave a positive reaction as long as he remained under observation. I have here a dried specimen of his blood, which still responds to the test, though it was taken from the finger over four weeks ago. I saw the patient to-day, two weeks after he left the hospital, and find that his blood now reacts less than the old dried drop of four weeks ago.

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* The cultures employed in these experiments were made from laboratory stock cultures which had not been transplanted for some weeks. I note this fact because Dr. Wyatt Johnston has suggested that the false reactions reported by some observers were probably due to the use of stock cultures which had been made active and virulent by frequent (daily) transplantation.

Another case in which the test proved of value was that of a patient who had been in the hospital for eight days without our having been able to arrive at a positive diagnosis. The patient entered the hospital on the 2d of November with a history of a three weeks' illness, sudden in its onset. His condition on the day of entrance suggested typhoid fever, but his symptoms during the next few days were not what one would look for in the fourth week of the disease. On the 10th of November some of the blood was sent to the board of health for examination, and a marked reaction was reported. The further course of the disease sustained the diagnosis of typhoid fever, and repeated tests of the blood gave uniformly a positive result. It is probable that in both of these cases a diagnosis would ultimately have been made from the clinical signs, but the blood-serum test saved us several days of uncertainty.

One case only of the nine, in a private patient of Dr. Henry W. Berg's, has given an absolutely negative reaction, though the blood has been examined four times from the tenth to the twenty-second day of the disease. The other six of the nine active cases were well advanced when the blood examination was made, and the positive result of the test simply confirmed the previous diagnosis. The dried blood of two of these cases, taken from the finger some seven weeks ago, still gives a marked reaction.

In the remaining five cases of Group I the test was not made until convalescence was established. In three the result was positive, the interval since recovery from the fever being two months in two cases and ten months in the third. The two negative cases were examined after an interval of five months in one case and sixteen months in the other.

Group II includes forty-eight cases of individuals either in good health at the time of the serum test or suffering from diseases other than typhoid fever, such as lobar pneumonia, malarial fever, tuberculosis, chronic nephritis, cirrhosis of the liver, puerperal sepsis, eclampsia, acute mania, melancholia, alcoholism, leprosy (three cases), scarlet fever, diphtheria, acute rheumatism, diabetes (three cases), as well as various minor ailments. The great majority of these cases failed to react at all to the serum test. In three, however—all patients in Bellevue Hospital—there was a partial reaction, never complete and unmistakable, but still as marked as is sometimes obtained in typhoid fever. The first of these doubtful cases was that of a negro named Chase, with cirrhosis of the liver and ascites. He stated that he had had no fever of any kind during his twenty years' residence in New York. His blood has been examined repeatedly, sometimes with negative result, at others with a doubtful reaction. The two other patients were also of the African race, one with nephritis, the other, in a woman, with puerperal sepsis. Only one test was made in each case. Three other negroes in the hospital gave no reaction.

Thinking that perhaps negroes were more or less immune to typhoid fever, I went last week to the Colored Home and Hospital, and with the kind assistance of the superintendent, Dr. Bickerton, I obtained blood from twelve of the patients. One only, however, of the twelve gave a moderate reaction, a patient with diabetes. I was told by Dr. Bickerton that they had not had a case of typhoid fever for fifteen years. But this may be partly due to the fact that patients with acute disease are rarely brought to the hospital, owing to the lack of an ambulance service. In my own experience in New York I do not recall a case of typhoid fever in a negro of pure blood. I have consulted the United States Census tables, as well as the reports of the Charity Hospital in New Orleans, and have found a somewhat lower rate of mortality from typhoid fever in the colored race than among the white population.

There were thirty white persons in this group and not one gave a positive reaction to the test, with the exception of a patient with necrosis of the tibia, who had had typhoid fever one year previously. Four of these persons were individuals who had had a fever of uncertain character a few months before the examination of the blood. The test was made in their cases in order to determine whether or not the previous illness had been typhoid fever. Had the result been positive, it might have been taken to indicate that the previous disease was typhoid in character; but the negative result can not be said to absolutely exclude typhoid fever, in view of the possible rapid disappearance of the agglutinating bodies in the blood, as shown by the result of some of the tests in the convalescent cases in Group I.

The greater part of the cases in the two groups just considered were those of patients in Bellevue Hospital, and they were examined during the month of November, when Widal's test was new to all of us in New York. In addition, as I have said, the clinical features of the cases were known before the blood was tested, and it is impossible, in work of this kind, not to be somewhat influenced in one's judgment of a doubtful reaction by previous knowledge of the case. I must add, however, that all of the typhoid-fever cases, as well as the doubtful cases among the non-typhoid patients, were passed upon by Dr. William H. Park, and his results were the same as those given above. The only undoubted typhoid case which failed to give a marked reaction was the case of Dr. Berg's, and that case is still under observation. By good fortune I happened to preserve the dried blood of four of the other eight active fever cases, and the reaction may still be observed. I have also the original specimen from the first negro that gave a doubtful reaction, and it is interesting to note that it fails now to react at all to the test.

At this point in my investigations it occurred to me that it would be well, as a sort of control to the above observations, to apply Widal's test to the blood of persons whose clinical history was unknown to me. Dr.

Frank W. Jackson, who succeeded me in the service at Bellevue Hospital on the 1st of December last, has kindly aided me in this plan, and, thanks to him and to the house staff of the first medical division, I have received from thirty to forty specimens of blood taken from selected patients in their wards. My third group is composed of these cases, and of a few others obtained from different sources. With very few exceptions, all of the specimens were submitted to the judgment of Dr. Park, who not only is an expert bacteriologist, but has also had more experience in the serum diagnosis of typhoid fever than any one else in New York. My object was not to test my qualifications in this new line of research. My experience during the month of November had convinced me that it was not advisable for the practising physician to pursue this method of diagnosis at the bedside. I wished to ascertain whether, with the aid of a bacteriologist, the clinician could determine whether or not he was dealing with a case of typhoid fever in the absence of the usual signs of that disease.

It is not necessary to describe in detail all the observations included in our third group of cases. I may say at the outset that in the main the clinical and the bacteriological diagnosis were in agreement. In Group I we have seen that one patient out of nine with typhoid fever failed to respond to the Widal test as late as the twenty-second day of the disease. In Group II, of forty-eight cases which were not typhoid in nature four gave a partial reaction. In Group III, in addition to several instances of doubtful reaction there are three cases in which the result of the serum test has not supported the clinical diagnosis. One case (Lang's) of well-marked typhoid fever has repeatedly failed to react to the test though it is now in the fifth week of the disease. Daily examinations of the blood have been made, and the reaction has been negative or doubtful throughout. Another case (Durphey's), which has not a single typhoid symptom, has given a marked reaction from day to day during the past two weeks, the first examination three weeks ago having been negative. I have brought specimens to-night of the blood of both of these patients, and I find myself in the rather novel position of showing the so-called typhoid reaction with normal blood serum, and, on the other hand, of demonstrating the failure of the reaction with the blood of a typhoid patient. An interesting feature of the first case (Lang's) has resulted from the fact that three days ago we were able to obtain some blood from the spleen, and Dr. Park has succeeded in isolating the typhoid bacillus from a culture of this blood. The case, therefore, is bacteriologically, as well as clinically, typhoid fever, in spite of the failure of the test of Widal. A third case, non-typhoid, gave a marked immediate reaction on one day, the 19th of December, but has been negative ever since. It happened that he, as well as Durphey, had been given thirty grains of quinine on that day some hours previously to the taking of the blood. As this was the first occasion on which Durphey had reacted positively, it was thought that possibly the reaction in both cases was due to the quinine. The drug was therefore given to six patients as an experiment, but the blood was apparently unaffected in any of the cases. I must not neglect to add that both Durphey and Bucklander are negroes.

In order to test the bacteriological accuracy of the serum test when performed by competent men, I sent last week to four well-known bacteriologists of New York specimens of blood taken at the same time from three different cases. I selected for this purpose Chase, the negro with cirrhosis of the liver; Durphey, the non-typhoid case with typhoid reaction; and Lang, the typhoid case with negative or doubtful reaction. The specimens were simply numbered, with no clew to the nature of the cases. I have received three reports in reply, and the results are the same in all. Chase is returned as "negative," Durphey as "positive" or "typical typhoid," and Lang as "doubtful" or "imperfect" reaction.

I shall quote in full one of these reports as an illustration of the care and thoroughness that are exercised in this sort of work.

The tests were made with a twenty-four hours' growth of Eberth's bacilli on agar—bacilli very motile and evenly distributed through hanging drop. Results noted at intervals as recorded below:

Specimen B. H. 31 (*this is the case of Lang*). *Examination No. 1.*—Five minutes: Bacilli very motile, and no evidence of agglutination.

Fifteen minutes: Motility somewhat diminished, but no well-marked clumping.

Thirty minutes: Some of the bacilli motionless and formed in loose clumps with bacilli in slight motion. Free bacilli very motile.

Sixty-five minutes: Clumping more marked, but bacilli forming the clumps are not entirely motionless. Some of the clumps not stable, and when clump breaks up majority of bacilli are very motile.

Forty-eight hours: Bacilli motile where free. In portions of drop some loose clumping.

Same Specimen. Examination No. 2.—In this examination a smaller amount of water was added to dried drop of blood and more of serum added to diluted culture.

Five minutes: Bacilli not as motile as in control specimen; scattered through the field, three to eight bacilli in loose clumps, and motionless. Free bacilli motile.

Fifteen minutes: Motility of all the bacilli impaired, and the loose clumps of bacilli more numerous.

Forty-five minutes: No change in reaction.

Twenty-four hours: Bacilli have very little motion.

Arrangement of clumps same as above.

Conclusions.—Would not consider the reaction *typical* of typhoid. When the strong serum was used it would be classed as doubtful or "imperfect" reaction.

Specimen B. H. 39 (this is the case of Chase). Examination No. 1.—Conditions same as for B. H. 31, examination No. 1.—Five minutes: Very active. Motility seemingly increased; no attempt at agglutination.

Fifteen minutes: Motility equals that of control specimen; no attempt at agglutination.

Thirty minutes: Motility markedly impaired; no clumps formed.

Sixty-five minutes: Some of bacilli are motionless, in others there is diminished motility. Some aggregation of bacilli, but can not be called "clumping."

(Control specimen showed no change at this time.)

Same Specimen. Examination No. 2.—Conditions same as B. H. 31, examination No. 2.—Five minutes: Some loss of motility, but no clumping.

Fifteen minutes: Marked loss of motility, but no clumping.

Thirty-five minutes: Motility same as above, and a few bacilli loosely collected together, but not entirely motionless.

Sixty minutes: Many of bacilli motionless, lying free in drop; others motile in but a slight degree. Some small groups of bacilli are motionless, but can not be considered agglutinated or clumped.

Two hours: Same as above stated. Reaction negative.

Specimen B. H. 35 (this is the case of Durphey).—Conditions same as in B. H. 31 and 39, examination No. 1. Five minutes: Motility inhibited, bacilli collected in large clumps; spaces between clumps free from individual bacilli.

Fifteen minutes: Same as before.

Thirty minutes: Same as before.

Sixty minutes: Same as before.

Twenty-four hours: Same as before.

Small quantities of this specimen gave marked reaction.

Would consider the reaction typical of typhoid.

This report of these three cases shows what nicety of judgment is required in arriving at a decision in a case of doubtful reaction, and it is quite possible that occasionally two observers may differ in their interpretation of the same specimen. As a rule, however, I think we may depend upon the bacteriological accuracy of the test. But what shall we say of its clinical significance, so far as we can judge from the observations that have been detailed this evening? A brief review of the cases will aid us in answering this question, and also enable us to formulate certain general conclusions. In Groups I and III there were in all twenty cases of undoubted typhoid fever in which the blood was examined during the febrile stage. In two of these cases the test failed, even as late as the third and the fifth week of the disease. In one of the two cases (Lang's) the reaction has varied from day to day, being sometimes negative and sometimes doubtful, and I think it probable that his blood will yet respond to the test.* As an aid to diagnosis, however, the test can not be said to have proved of any value in these two cases; in fact, the negative result was absolutely misleading. On the other hand, of some eighty odd cases, non-typhoid in character, one case gave uniformly a positive result; a second case reacted positively on the first examination, but was negative on all subsequent tests. In several other cases the reaction was doubtful. In a total, therefore, of one hundred cases the results of the serum test failed to agree with the clinical diagnosis in four instances; in a number of other cases the reaction was uncertain or doubtful in character. In about ninety cases of the hundred the reaction was decided, and its accuracy was proved by the subsequent course of the disease.

Conclusions.—1. In the large majority of cases of typhoid fever the blood serum will give the so-called typhoid reaction at some time during the active period of the disease. In a small proportion of cases, perhaps ten per cent., the reaction will not be obtained, if at all, until the diagnosis has already been made from the clinical evidence.

2. In cases apparently non-typhoid in nature, a positive reaction may occasionally occur, but probably not oftener than in one or two per cent. of the cases. This pseudo-reaction is to be attributed to the protective bodies which, as we have seen, are present to a greater or less extent in normal blood serum.

3. In a varying proportion of cases, both typhoid and non-typhoid, a partial or doubtful reaction takes place. Repeated tests are then required in order to determine whether the reaction is due to the normal protective bodies or to the specific properties of typhoid blood.

4. The serum test of Widal is a most valuable aid in the diagnosis of typhoid fever. With greater experience and improved technique its value will in all probability become even greater and more clearly defined. For the present, however, the test should not be relied upon alone, but should be taken together with the clinical signs of the disease.

A CASE OF ACROMEGALIA,

WITH AUTOPSY.

By HARLOW BROOKS, M.D.,
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PATHOLOGICAL INSTITUTE OF THE NEW YORK STATE HOSPITALS,
AND ASSISTANT CURATOR TO BELLEVUE HOSPITAL.

The present paper is designed merely as a preliminary report, and consequently in it the writer will only touch on those points brought out in the history, necropsy, and microscopic examination which appear to have the most direct bearing on the case, and will reserve for a future paper the more careful and complete analysis of the case, together with such conclusions as a thorough microscopic study of the tissues may enable him to draw.

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* Two weeks after this paper was read a positive reaction was given by the blister fluid of this patient, convalescence being apparently established. The blood serum, however, still failed to react. One week later the patient had a relapse, and a reaction was obtained from both blood serum and blister fluid.

The patient, A. S., was admitted to the J. Hood Wright Memorial Hospital, December 2, 1896, having been brought in by the ambulance while in a semicomatose condition.

From the history kindly furnished by the house staff the following abstract has been made:

Patient, a man, aged thirty years, of English birth and parentage. He has habitually indulged in alcoholic beverages in moderate amounts. He seems to have been in excellent health up to 1891, when he received a severe fall which resulted in a scalp wound; the patient's brother, an unusually intelligent man, noticed no change in his condition following this injury.

In 1893 the patient was still in good health. At this time he weighed about a hundred and seventy-five pounds, wore a No. 7 hat, 7½ glove, and 7½ shoe. Three years later he was obliged to wear an 8½ hat, a No. 11 shoe, and his hands had become so large that it was necessary to have his gloves made to order. Meanwhile the weight had increased to two hundred and fifty pounds. During this time, while in another city, he had been treated for acromegalia, and after some treatment the progress of the disease was thought to have been arrested.

About six months before the patient entered the hospital he was thought to have syphilis of recent origin, and received treatment for the same with abatement of those symptoms. For the last two months he had considerable trouble with the right eye, and was treated, apparently without any result, for syphilitic iritis. He was at this time suspected of using narcotics, but no direct evidence on this point can be found, the supposition apparently resting only on the alternating irritable and drowsy condition of the patient, and on the symptom of great thirst. His appetite finally became very poor, although the great thirst still persisted.

His mental condition, manifested by drowsiness and irritability, constantly became worse, and at times he was irrational. He had attacks of dyspnœa, some of which were of long duration. He constantly complained of intense thirst.

After a short walk one day the patient went into a state of collapse, and the next morning when seen by the ambulance surgeon he was still in a stuporous condition, yet able to answer questions when aroused. The tongue was coated and dry. The skin somewhat cyanotic. The pulse was full, but feeble and rapid. The temperature 92.2°. The abdomen was distended and tympanitic. The right pupil was dilated and did not react to light. The left pupil was normal in size and action. The breath had a peculiar sweetish odor.

The urine which was drawn by the catheter was found to contain two per cent. of albumin and 7.5 per cent. of sugar. His condition of stupor gradually deepened, and the next morning he died. Just before death the temperature, which had gradually risen since his admission, stood at 103.8°; pulse, rapid and feeble, 128; respiration, 38.

The autopsy was performed about three hours after death.

Autopsy.—External examination: The body is that of an unusually large man. The head is large and oval, the face flat, and the eyebrows are prominent, thick, and overhanging. The eyelids are heavy and the lashes long. The nose is short, thick, and flat, and the end has a globular appearance. The nostrils are large and the alæ nasi are thick and heavy. The lips are thick and heavy and the mucous membrane is markedly everted. The tongue is large, very broad, flat, and thick. The malar bones are large and prominent.

The ears are large and well formed, but project from the head in a striking manner.

The neck is short and thick. The neck muscles are large and well formed.

The shoulders are broad, square, symmetrical, and muscular.

The thorax is symmetrical, well formed, and its muscular development is excellent.

The arms and forearms are well shaped, but the muscular development is somewhat below that of the trunk, and the muscles are rather soft and flabby.

The wrist joints are enlarged and very prominent. This enlargement seems to be entirely bony, and to be one of the distal extremities of the radius and ulna, rather than of the carpal bones.

The hands are short, thick, flat, and broad. The muscles are not well formed and the palms are soft and flabby. The thumbs are abducted to nearly a right angle to the median line, and are short, thick, and have a peculiar square distal phalanx. The nails are broad and flat, not thickened or creased. The ends are curved downward. The other digits of both hands show similar characteristics, the distal phalanx in each instance having a peculiar bulbous appearance.

The abdomen, which is symmetrical in form, is distended and tympanitic. The musculature is good.

The pelvis and thighs are large and well formed; the muscles of the thighs are, however, somewhat flabby. The knee joints are proportionally very large and prominent. The patellæ are enlarged and projecting.

The legs are fairly well formed, but the muscles are soft and flabby. The distal extremities of both tibia and fibula are manifestly enlarged, the enlargement being bony in nature.

The feet are heavy and thick, soft, not muscular. The toes are inverted and the heels are drawn up. The plantar surfaces are soft, though bunions are present at the usual points of pressure. The great toe is deflected outward from the median line of the foot. The toes are short, the bases thick, and the distal phalanges have an appearance similar to that of the finger ends. The nails here as there are broad and flat, not thickened.

Careful measurements were taken, but are reserved for a future paper.

The skin is soft and white, and has a peculiar œdematous appearance over the face. A large amount of fine, crisp, dark hair is distributed over the anterior surface of the thorax and abdomen, down the back, and over the flexor surfaces of the extremities. The hair on the head, over the pubes, and in the axillæ is thick, fine, and jet black in color.

At the anterior fold of the right axilla, at about the level of the nipple, is a suppurating nodule of about the size of a pea. It is not indurated, and a lesion very similar in character is found on the abdomen, in the median line, about two inches below the umbilicus.

The penis is small and the foreskin is long, but it can be drawn back, exposing the glans, on the surface of which, just below the meatus, is found a round, depressed scar about 0.6 centimetre in diameter. The testicles are firm and of about the usual size.

Rigor mortis is just beginning to be apparent.

Section.—The muscles are deeply colored. The blood is fluid. The amount of panniculus adiposus is small.

There are a few old stringy adhesions over the base of the lung in the left pleural cavity. The pericardium is apparently normal.

Heart: Weight, fifteen ounces. The cavities are contracted. The amount of pericardial fat is small. The muscle is firm, solid, and of good color. A small amount of ante-mortem clot is found in the upper portion of the right ventricle.

Lungs: The bronchi are deeply congested. The lungs show œdema with congestion. The peribronchial nodes are somewhat enlarged and are deeply pigmented.

Stomach: The stomach is greatly dilated and is distended by a large amount of partly digested food, of which the larger part is found to be poorly masticated cabbage leaves. The mucosa seems to be in a fairly normal condition.

Intestine: There is great gaseous distention of the entire intestine. The capillaries of the peritonæum are injected, and there is a small amount of fibrinous exudation on the surface of the peritonæum. A sac of nonpurulent, serous exudate is found encysted about the curve of the sigmoid flexure. General peritoneal adhesions of recent origin are present, most intimate about the caput coli, which is bound down in the right iliac fossa. The appendix, which is about six inches long, is closely adherent to the posterior surface of the cæcum, and is surrounded by much inflammatory tissue. It is not perforated, but is the seat of an active inflammatory process, and contains a considerable amount of fæcal matter. The entire intestine down to the sigmoid flexure is completely filled with a soft grayish fæcal mass, containing bubbles of gas. The intestinal mucosa is apparently normal.

Liver: Weight, eight pounds five ounces. The liver is enlarged. The capsule is smooth and is not thickened. The tissue is firm but granular. It is a light grayish-brown in color. The lobules are well marked. The perivascular connective tissue is apparently not increased in amount.

Spleen: Weight, thirteen ounces. The spleen is enlarged; it is bound by recent adhesions to the cardiac end of the stomach. The capsule is considerably thickened, and is covered by small fibrinous masses. It is flabby in consistence and chocolate in color.

Pancreas: The pancreas is large, firm, and of a normal pink color.

Adrenals: The adrenal bodies are large and well formed; they show no apparent lesion.

Kidneys: United weight, one pound eight ounces. Both kidneys are greatly enlarged. The capsules are thickened and slightly adherent. They are dark pink in color. The cortex is thin. The markings are distinct and regular. The tissue is very granular and friable. The bases of the pyramids are deeply congested. The vessels are distended. Both pelves are dilated with urine.

Ureters: The ureters are large but apparently normal.

Bladder: The urinary bladder is large. It contains a small amount of clear urine. The wall is thin, and it has evidently been greatly distended.

Head: There is a scar on the scalp of about the size of a silver half dollar. It is located five centimetres to the right of the median line and on a line drawn perpendicularly between the two mastoid processes. The bones of the calvarium are greatly thickened. The amount of cancellous tissue is proportionally small. The skullcap is symmetrical and well arched.

Meninges: The dura is not thickened or adherent. The vessels of the membranes are congested, the congestion being most marked over the frontal lobes. There is a moderate amount of submeningeal œdema. The pia is slightly adherent, especially over the frontal lobes.

Brain: The brain is large and symmetrical. The convolutions are well marked and the sulci are deep. The brain tissue is firm and solid. The vessels are considerably congested throughout the entire brain. The ventricles contain the usual amount of normal fluid. No lesion is evident in either cerebrum, cerebellum, bulb, or along the floor of the ventricles.

Crowning up from the pituitary fossa and inclining toward the left is found an ovoid red mass, measuring 1.5 centimetre from before backward and 0.7 centimetre from above downward. It is attached below, apparently, to the pituitary body. The mass is of a soft, jellylike consistence, and is quite vascular. It is found to press directly on the left optic tract just posterior to the chiasm. The tumor is attached to the hypophysis, which is enlarged to about five times its usual volume. The pituitary fossa is greatly enlarged, and the bones making up its wall are abnormally thin. No adhesions exist between the pituitary body or tumor and the surrounding tissues.

Thyreoid gland: The thyreoid gland is symmetrically enlarged. It is dark-red in color, it is firm in consistence, and contains a few cysts filled with a gelatinous material.

Thymus: The thymus gland is found to persist. It is symmetrical in form. Each lobe measured from above downward about six centimetres, 2.5 centimetres in breadth, and about 1.7 centimetre thick at its largest portion. The tissue is firm. The color is a light pink.

The ganglia of the sympathetic system are large and distinct.

Microscopical examination of the enlarged pituitary body demonstrated an apparently simple hyperplasia of the lymphadenoid portion of that body. The posterior lobe of the pituitary was found to be very small, though apparently normal in structure. The small tumor mass appended to the pituitary body, as described in the autopsy report, was found to have a structure identical with that of the hypertrophied portion of the hypophysis, of which it is probably a part.

Both the thyreoid and thymus glands showed an apparently simple numerical increase of their normal elements.

The ganglion cells of the sympathetic ganglia were found to be quite deeply pigmented.

A minute microscopical study of these and the other tissues of the body has been made, and this, with such conclusions as seem justifiable, the writer purposes to publish in a coming number of the *State Hospitals Bulletin*, as a conjoint work from the Pathological Institute of the New York State Hospitals and the Carnegie Laboratory.

Carnegie Laboratory, *February 24, 1897*.

The St. Louis College of Physicians and Surgeons held its graduation exercises on Wednesday evening, March 17th.

TWO NASAL CASES.

ONE OF PRIMARY CHANCRE, ONE OF DERMOID CYST.

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In the *New York Medical Journal* of October 10, 1896, there appeared the histories of two nasal cases, one of initial lesion, another of cyst. To these I wish to add the report of the following cases, both of which came under my care at the throat department of the Mount Sinai Dispensary:

Case I. *Intranasal Chancre.*—Referred to the dispensary by Dr. H. S. Stark. A man, married, thirty-five years of age, waiter by occupation. Complains of inability to breathe through the right nostril for the past few weeks. Examination shows the right fossa completely filled with a compact mass of granulations, starting about one inch from the orifice. Attempts to probe were resisted on account of the great pain. Under cocaine little more could be gained, for as soon as the probe had passed beyond the anterior border of the mass, the pain was too intense to be endured by the patient. The granulations were found, however, to spring from the sæptum. A Volkmann spoon was introduced and the mass rapidly curetted away, the patient suffering severely. There was also considerable hæmorrhage. So intense had been the pain that the patient refused further examination.

He returned on the second day following. Much to my surprise, the granulating mass was in exactly the same state as it was before removal. In two days it had completely reproduced itself. A probe was passed through the inferior fossa, the patient objecting very much, and insisting that he could not stand the pain. A hard mass was detected behind the granulations, beyond which the probe could not be passed, and which was extremely sensitive, notwithstanding the free use of cocaine. The granulations were again curetted away for the purpose of investigating the hard body posteriorly. The patient would not, however, submit to this and declined further interference.

The diagnosis up to this time had been that of tertiary specific growth, in spite of the absence of a history pointing to syphilis, and treatment (with iodide of potassium) had been commenced. But on the patient's return two days later, not only was the mass reproduced, but a typical secondary maculo-papular syphilide covered the entire body, with the other symptoms of primary infection, except that the cervical glands on the side of the nasal trouble were more enlarged than those of the remainder of the body. A thorough examination of the penis and body was now made, but it failed to reveal the least sign of initial trouble. No old scars were found on the penis. Dr. Lustgarten was asked to see the case, and was positive in his opinion that the nose was the seat of the primary chancre. The chancre proper was undoubtedly the hard body felt with the probe, as the exuberant mass in front had nothing about it characteristic of a primary sore.

The patient was put upon the use of inunctions with the usual rapid result. Six months after the appearance of his lesion, at the region of the middle turbinated there was found a complete obstruction of the right nostril, with the exception of a small passage through the inferior fossa. As to the mode of infection, nothing could be learned.

This case was presented before the Metropolitan Medical Society a year ago by Dr. E. L. Meierhof.

Case II. *Intranasal Dermoid Cysts.*—A woman, aged sixty-five years, comes for deafness which she has had for a great many years, and has been told that the drum membranes were gone. Examination of the ears showed both membranes present, but greatly retracted. Examination of the nose revealed that both sides were almost completely obstructed by myxomatous-looking growths springing from the middle turbinated bodies. Under cocaine, these bodies were removed intact with the cold snare. The conditions on both sides were almost identical.

Upon examining the specimens they were found to be multilocular cysts. On puncturing one of the little sacs, a thick, cheesy material could be easily pressed out; and repeating this on several of the sacs, they were found to be distinctly partitioned from one another.

The specimens were handed to Dr. Mandlebaum, the pathologist of the hospital, who pronounced them dermoid cysts. The patient was kept under observation for at least six months; there was no sign of recurrence.

217 East Sixty-second Street.

AURAL COMPLICATIONS IN MUMPS.

WITH REPORT OF EIGHT CASES.

By JAMES L. MINOR, M. D.,
MEMPHIS, TENN.

Parotiditis attracts little attention as a rule. The disease demands the interest of the general practitioner chiefly through its sequelæ; and as the aurist is called in for only one of the rarer forms of these, and usually after it is well pronounced and established, the opportunities for studying its aural complications are meagre.

Thus far, it has been established that a small proportion of those attacked with mumps suffer also from ear disease, which may cause simple impairment of hearing, but usually absolute and permanent deafness in one or both ears. It usually comes on between the fourth and eighth days, and ordinarily declares itself by tinnitus, impaired hearing, dizziness, nausea, and finally labyrinthine deafness. Extension of the disease from the parotid to the ear is variously attributed to metastasis; direct extension of the inflammatory process through fissures adjacent to the inner ear; from the outer to the middle ear, and thence to the labyrinth; or by way of the Eustachian tubes.

It is rare. Dr. Roosa found it in only ten cases out of five thousand ear patients treated at his office.

I have collected the notes of eight cases—six seen by me, and two unreported cases, kindly placed at my disposal, from the notebooks of Dr. H. D. Noyes, of New York.

A striking feature is the frequency with which the left ear is attacked. Of my cases, the left ear was affected in five, the right in one, and both in two. And I notice that Dr. Roosa's cases show a decided predilection for the left also—the left, six; the right, three; both, one. This may be a mere coincidence; but I desire to call attention to it because the general practitioner has noticed that when the testicle is involved in mumps it is most frequently the right. I may state that in all of my cases both parotids were involved. In none was the testicle affected.

The most important points brought out by a study of my notes can be illustrated by grouping the cases as follows:

1. Those in which the ear trouble began and ended in the middle ear, three—Cases II, III, VII.

2. Those in which it began in the middle ear and extended to the inner ear, one—Case I.

3. Those in which it began and remained in the inner ear, three—Cases V, VI, VIII—and in none of these did there seem to be involvement of the semicircular canals, the cochlea alone being affected.

4. Those in which it began in the inner ear, the semicircular canals, and extended first to the middle ear and later to the cochlea, one—Case IV.

The frequent involvement of the middle ear certainly suggests the probability of benefit from treatment. And if these cases were promptly and intelligently treated, instead of being consigned at once to the category of incurable affections, a large proportion of them would doubtless recover their hearing.

Case I.—Mr. M. C., aged thirty-five years, seen September 1, 1881; stout, healthy man; mumps.

June 6, 1881.—Both parotids involved. No orchitis. On June 9th, sense of fullness, with tinnitus, in the *left ear*, relieved by drawing auricle from head. This condition continued for a week, when dizziness appeared, and, after two days, difficult locomotion, with tendency to fall back and to the left. The dizziness and disturbance of equilibrium, after remaining some days, gradually grew less, and were almost absent when he came to me.

I found the right ear normal. The left ear was deaf to all sounds—watch, voice, and tuning fork. Aside from slight retraction and a little dullness of the drums—about equally marked in each ear—nothing else could be found. He was treated a few times, and passed from observation. I saw this gentleman eight years later and his condition was the same.

In this case the trouble evidently began in the middle ear, and probably extended thence to the inner ear. Early treatment would probably have prevented permanent effects.

Case II.—A. B., a man, aged twenty-eight years, had a severe attack of mumps in January, 1883. All of the salivary glands were involved, and constitutional disturbance was considerable. No orchitis. On the third day, earache, with hard hearing and tinnitus, on the left side. I saw him a few hours later, and found injection around the entire periphery of the drum membrane and along the malleus handle; light spot indistinctly visible; no bulging (acute catarrh of middle ear); and hearing reduced to one twelfth. Politzer's inflation was practised, with some relief, and the hot-water douche was used with much benefit. The next day the right ear became affected in the same manner, and was treated similarly.

Gradual improvement set in and resulted in a perfect cure in about one week.

This case was one of acute catarrh of the middle ear, doubtless due to direct extension of inflammation from the throat. Complete recovery was probably due to prompt recognition of the difficulty, and judicious treatment, which prevented the disease from extending to the deeper structures.

Case III.—Miss A., aged seventeen years; mumps; February 9, 1891. Both parotids involved; not much general disturbance. On third day, pain, impaired hearing, and tinnitus in both ears. I found a slight amount of pus in each ear, removal of which revealed a small perforation in each drum membrane. Hearing, $\frac{10}{25}$ in right, $\frac{6}{25}$ in left. Politzer's inflation and douching the ears with hot antiseptic solution daily resulted in a cure in ten days.

This was a case of acute suppurative inflammation of the middle ear, also caused by direct extension of the disease, and the early treatment may have prevented involvement of deeper structures.

Case IV.—Mr. B., aged nineteen years (referred to me by Dr. M. B. Herman, of Memphis), seen May 18, 1894. Parotiditis, both sides, five weeks before. The attack was as follows: While at work, he became giddy and sick at the stomach; went home and to bed. Next day, he was too dizzy to get up; could not lie on the left side because dizziness was increased and nausea produced; the next day both parotids were inflamed and enlarged. He remained in bed four days longer. Then he got up with assistance and went to his office, took cold, and noticed for the first time that his hearing was dull on the left side; this dullness of hearing was relieved by pulling on the auricle so as to straighten the canal. The next day dull hearing came on again, to be temporarily relieved by pulling on the ear. After lasting an hour or so it passed off entirely. This occurred daily for six days, and then the deafness became complete and permanent—remaining in the condition which existed when I first saw him. Complains of absolute deafness in the left ear (tinnitus), and slight dizziness when sudden movements are made. The appearances of the drum membrane are normal. Tuning fork heard only in right ear. At times it seems that he hears loud sounds in the bad ear, but that is uncertain. Treatment advised, but not carried out.

This case is interesting in that the process involved first the inner and later the middle ear. Whether the disease extended from the former to the latter, or directly from the throat, can not be stated; but if treatment for the middle ear had been promptly instituted, I believe the hearing would have been preserved.

Case V.—Miss W., aged fifteen years (referred to me by Dr. Isom, of Holly Springs, Mississippi), seen May 29, 1894. She had double parotiditis eighteen months ago, and has since been deaf in the left ear. There was no dizziness, nausea, or other symptom of labyrinthine involvement. Right ear normal. Left ear normal to all appearances, but deaf, absolutely, to all sounds—tuning fork and others. This case was simply one of nerve deafness when I saw it. How it began, it is impossible to say.

Case VI I saw with my associate, Dr. E. C. Ellett. The patient was one of Dr. John M. Maury's, and through his courtesy the following notes were obtained:

Mrs. A., widow, white, aged twenty-eight years, was taken on February 28th with mumps, the left parotid swelling first, the right five days later.

There were no unusual features, except that the pain on the left side was severe enough to necessitate an opiate for relief.

March 12th.—Though there was still some swelling on the left side, she was feeling well, and on this day moved across the city. At 10 P. M. on the 12th, while standing, she suddenly became faint, lost consciousness, and fell to the floor.

Shortly after being put to bed she regained consciousness and vomited. Temperature, 101° F.; pulse, 76 and weak.

Nausea continued for ten days, though there was no more vomiting.

13th.—Feeling well but weak. Temperature in the mouth, 97° F.; pulse, 70.

On the 13th, at 7 P. M., while in bed, she again suddenly felt the extreme weakness, but did not lose consciousness, and, though more nauseated than during the day, she did not vomit. At this time her temperature was 96° F. in the mouth; pulse, 54. This attack lasted three hours.

April 18th.—Since the second attack she has been entirely deaf in the left ear.

For a week there seemed to be a loss of muscular sense in the muscles controlling the head—*i. e.*, on rising up she would express herself as "not knowing just where her head was," though motion was in no way limited.

Her pulse was below normal in frequency for ten days, gradually reaching 70, and for the next week ranging between 76 and 90.

Now, six weeks since the first attack, her temperature has only on two occasions reached 98.5°, and at one time was as low as 95.5°.

Since the first attack she has constantly had a roaring in the left ear, and has at all times complained of a tired aching in the spine. She has never at any time had vertigo.

Examination of the ears showed the right one to be normal in every respect. The left was deaf, absolutely, to all sounds. The drum membrane was somewhat retracted and a trifle thickened, but did not depart greatly from health.

In this case the trouble was in the labyrinth. Whether the condition of the middle ear had any connection with the deeper structures or with the parotids can not be stated.

Case VII.—Mrs. W. P. B., aged thirty years (page 368, Dr. H. D. Noyes's notebook). Parotiditis at ten years, leaving trouble with the *left* ear, which has existed since. Has nasopharyngeal catarrh, and her hearing is worse with colds. Membrana tympani thick and retracted. Hearing voice brought up to two inches by Politzer. Right ear, hearing normal, though membrane is a little sunken.

This case was purely one of involvement of the middle ear from beginning to end.

Case VIII.—H. W., aged thirteen years (page 405, notebook of Dr. H. D. Noyes). Mumps at two years, no ear trouble. Again, severe attack of mumps at eleven years; was delirious for a short time, and on recovery was deaf in the right ear, without tinnitus, dizziness, or other symptom. Is a nervous, weak child. Had epileptoid convulsions when eight years old, and when nine, had a fall, striking on the head. Sudden rising from bed causes headache, and sometimes dizziness. No disturbance of locomotion. Hearing hard to measure; but probably hears nothing in the right ear, and normally in the left. The membrana tympani is a little opaque on the left, opaque and sunken on the right side.

This case was one which began and ended in the inner ear.

SCIATICA
FROM COMPRESSION DURING LABOR
CURED BY MASSAGE AND NERVE STRETCHING IN FIFTEEN SÉANCES.

By A. KENNEDY,
PARIS,
FORMERLY ASSISTANT DEMONSTRATOR OF MASSO-THERAPEUTICS
AT THE CLINIQUE FRANÇAISE, ETC., PARIS.

Mrs. C. D., clerk, residing at No. 131 rue des Fourneaux, Paris, aged thirty-two years, primipara, was seized with sciatica on the right side after parturition. I was called in by the advice of Dr. Bra, who recommended massage.

At my first visit, on the twenty-second day after the labor, I found the right lower extremity slightly œdematous and strongly flexed, with intermittent fulgurating pains along the course of the sciatic nerve. The posterior muscles of the thigh and those of the calf were in a state of contracture, and the entire neuromuscular apparatus of the limb was affected. The patient could not stand, and could lie only upon the left side. She was suffering from insomnia, anorexia, and, in short, from a whole train of concomitant symptoms.

I devoted the first *séance* to general centripetal stroking (*effleurage*), at first very slight, later more energetic. In spite of all precautions this caused pain severe enough to limit the duration of the *séance* to ten minutes.

The next day I repeated the above procedure, with the addition of slight centrifugal kneading (*pétrissage*) along the course of the sciatic nerve, from the sciatic notch to the popliteal region.

Third Séance.—After repeating the two procedures above referred to, I went on to stretch the sciatic nerve, fixing it, as well as the weakness of the patient permitted, at its exit from the sciatic notch. The patient was laid upon the abdomen, and I made traction upon the nerve, at first gently, afterward more forcibly, along its whole course down to the popliteal space. The *séance* ended with pinching (*malaxation*) from below upward, slight kneading (*pétrissage*), and a general stroking (*effleurage*), beginning with the heel. The *séance* was very painful to the patient, but the resulting fatigue gave her a better night's rest.

Fourth Séance.—The same treatment was continued, with increase of pressure and of penetration between the muscles. After this *séance* the patient slept better, and began to take food without repugnance.

The *fifth and sixth séances* were similar to the fourth, but the massage was progressively more energetic.

At the *seventh séance*, having brought about a nearly complete cessation of pain, I laid the patient upon her back across the bed, with the pelvis brought to the edge of it. I then made her flex the left limb completely, and keep it flexed with her hand. Next, I seized the affected right limb by the heel, extended the knee forcibly, and, fixing the latter with my left hand, I flexed the entire limb at the hip joint. This latter movement was not carried at first beyond thirty-five degrees from the horizontal, but afterward I pushed it to forty and sixty degrees. At this latter point the pain became unendurable, and the patient was obliged to bend her knee. I then replaced her in the "knee-elbow" position, and repeated the movement just described.

Eighth Séance.—After a general stroking (*effleurage*) and centripetal kneading (*pétrissage*), the patient lying upon the abdomen, I seized the ankle with both hands and began direct traction upon the sciatic nerve, which was fixed by an assistant at its exit from the pelvis.

This traction was repeated five or six times with a force moderate at first, but progressively greater up to the point of producing intolerable pain. Immediate general stroking (*effleurage*) followed, and then a renewal of the position on the back at the edge of the bed. Without loss of time I flexed the thigh strongly upon the abdomen, fixing the nerve at its exit from the sciatic notch, as before, with the metacarpo-phalangeal joints of my left hand, while, with the heel in my right hand, I made repeated movements of flexion and extension of the leg at the knee joint. Finally, with my left hand still in position at the sciatic notch, I took the knee in my right hand, bent the leg upon the thigh, and brought the thigh into contact with the chest, making vigorous pressure in order to elongate the nerve. The *séance* ended with general pinching (*malaxation*) and stroking (*effleurage*) *secundum artem,* together with both active and passive movements.

At the termination of this *séance* I told the patient to get up and take a few steps about the room. The result was very satisfactory, and she was greatly surprised to find that she could both support herself upon the limb and go about, though, of course, with a limp.

It should be noted that, under the influence of the massage, the stools had become regular, as well as the secretion and evacuation of the urine, while at the beginning of the treatment there had been a relaxed condition of the anal and vesical sphincters. At the seven subsequent *séances* the same manipulations were repeated. The pain produced by them, intolerable at first, disappeared little by little, its place being taken by a marked feeling of comfort. After the ninth *séance* Mrs. C. could take short drives without pain or fatigue, and was well enough to attend to her affairs.

On the fifteenth day I ceased the massage, Mrs. C. having resumed her former mode of life, and being able to walk without limping.

Of course it is not every case of sciatica from compression which would admit, without risk, of such heroic treatment. But, in this particular case, it was necessary at all hazards that the patient should be afoot at the end of fifteen days, on pain of losing her position in a public office. Certainly it is proved by this case that, in treating obstinate sciatica, one should not always yield to the complaints of the patient, or always hesitate to inflict even very severe pain.

Therapeutical Notes.

Benzo-iodhydrin.—Chenal (*Thèse de Paris,* No. 52, 1896-'97; *British Medical Journal,* February 27, 1897) suggests this ether of glycerin as a useful substitute for iodide of potassium. It is prepared by shaking a mixture of benzoyl iodide and epichlorhydrin, at a heat not exceeding 158° F.; the resulting brown fatty mass, a benzochlorhydroiodhydrin, is soluble in ether, in alcohol, and in petroleum oils, but not in glycerin. Administered in doses of two grains (corresponding to fifteen grains of potassium iodide), he found that it caused no disagreeable symptoms of iodism; and from twelve observations he concludes that its immediate therapeutic effects are equal to those of the potassium salt, while it is more slowly eliminated and a smaller dose is required. He attaches much weight to the antiseptic action of the considerable proportion of benzoic acid and chlorine contained in the drug, but admits that the question as to the permanence of the results requires more prolonged observation.

Anæsthesia and Suggestion in Hysterical Aphonia.—Dr. Arslan (*Gazzetta degli ospedali,* January 10, 1897; *British Medical Journal,* February 27, 1897) reports five cases of hysterical aphonia in women treated successfully by rapidly anæsthetizing the patients with ethyl bromide and, as soon as they were partially insensible, suggesting to them that they should shout their names, count in a loud voice, etc. In three of the cases influenza had played a part in causing the trouble.

Tannin in the Treatment of Pruritus Pudendorum.—Dr. Heidenhain, of Köslin (*Berliner klinische Wochenschrift,* 1897, No. 2; *Wiener medizinische Blätter,* March 4, 1897), states that he never fails to cure pruritus pudendorum by employing the following treatment: He applies compresses wet with a hot solution of a tablespoonful of tannin in a quart of water. The vagina is previously douched with an antiseptic solution, and a wad of cotton wet with the tannin solution is laid between the labia. This is done every night.

Oil of Turpentine in the Treatment of Acne Rosacea.—The *Journal des praticiens* for March 6th cites Dr. O. Betz, of Heilbronn, as recommending inunction with oil of turpentine for the cure of acne rosacea. He discovered its virtue by chance. A woman had bronchitis, and he prescribed for her frictions of the chest with the oil. She had also acne rosacea, which he had treated previously without success. A few months later, to his great surprise, he found that she no longer presented any trace of the acne lesions, and learned that this result had followed upon her rubbing the turpentine oil on the rosaceous patches. Thereupon he recommended the treatment to a man who for seven years had had acne rosacea which had resisted all treatment, and under the turpentine inunctions the lesions disappeared in less than a month.

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THE MEDICAL PROFESSION OF NEW YORK AND THE PROPOSED NEW CITY CHARTER.

There are some important particulars in which the pending charter of the enlarged city of New York unquestionably does injustice to the physicians of the city and is calculated to work oppressively. These matters were under discussion at last week's meeting of the Academy of Medicine, when a member remarked that there was no use in talking about them, for he "had it straight" that the charter in its present form was going through. It is to be feared there is too much truth in this, but it may not yet be too late to get due consideration of the points in question from the legislature or from the governor.

One of these points is covered by the following passage in the charter. We quote from the version issued by the *Brooklyn Eagle:* "Said board shall consist of the president of the police board, the health officer of the port, and three officers appointed by the mayor, to be called health commissioners, two of whom shall have been practising physicians for not less than ten years preceding their respective appointments. The health commissioner who is not a physician shall be the president of the board and shall be so designated in his appointment."—*Chapter iv, section 109.*

We have heretofore held and do still maintain that this provision, that the health commissioner who is not a physician shall be the president of the board, is an unjust slur upon the medical profession and may prove detrimental to the public interests. We are quite ready to believe that the slur is not intended; the provision probably owes its origin to a determination to keep the politicians supreme. It is no justification of it to say that it only continues the present state of things; the Sultan of Turkey may say that that is all he is trying to do. There is now an opportunity to right a wrong, a grievous wrong. Who made the board of health? To whom is its existence due? The medical profession of the city, aided by their brethren throughout the State. Let the mayor be free to appoint a physician president of the board. We can not, of course, demand or expect such action on his part invariably, but we are at least justified in demanding that he be allowed to take it.

The following section, wearisome from the literary point of view as well as irksome to physicians as good citizens, contains the inquisitorial provision that any physician may be summarily forced by the board of health to make oath, for public record, to what he knows or thinks in regard to the ailments of any of his patients who are unfortunate enough to have, or be suspected of having, any disease that is pestilential, contagious, or infectious—in flagrant violation, it may be, of the legal obligation resting upon physicians not to divulge patients' secrets confided to their keeping as a part of the data on which to form a diagnosis or mark out a plan of treatment.

The section is as follows:

"The department of health may require of any physician, not less than three hours after service of a demand thereof upon him, an affidavit stating therein whether he has or has not any patient who, in his opinion, shall then be sick of a pestilential, contagious, or infectious disease, and, if he has any such patient, to state in such affidavit his or her name and the house or place in said city where he or she shall then be, and the nature or name of such disease, to the best of his knowledge and belief."—*Chapter xix, section 1248.*

We now come to the penalties that may be imposed: "Every practising physician who shall refuse or neglect to perform the duties enjoined on him by the foregoing section shall be considered guilty of a misdemeanor, and shall also forfeit for each offense the sum of two hundred and fifty dollars, to be sued for and recovered by the department of health. It shall be the duty of each visiting, hospital, and consulting physician to make an immediate report to the department of health of the name of every practising physician by whom he shall have reason to believe the provisions of said section have been violated; and if such physician shall neglect or refuse to perform his duty, the department shall order him to be suspended from any office he may hold, and he shall, moreover, be liable to such further penalty and to such prosecution for his violation of this law and of his duty as the board of health shall determine."—*Chapter xix, section 1249.*

In other words, every physician in the city is to be compelled by law, not only to violate professional confidence himself if occasion arises, but to play the spy on his professional brethren, under the penalty of suspension from any office he may hold and "such further penalty" and "such prosecution" "as the board of health shall determine." We are to be put absolutely at the mercy of the board of health. The proposition is abominable and unendurable. We believe it to be also unconstitutional. Let it be stricken out.

Since the foregoing was written, the news has come that the charter has "gone through" the House without amendment. It has yet to pass the Senate, and we trust that it will not escape close scrutiny on the part of that body.

THE PATHOLOGY AND TREATMENT OF ITCHING.

Dr. de Wannemacker, of Ghent (*Wiener medizinische Blätter*, March 4, 1897), remarks that from the ætiological point of view we may divide pruritus into the primary forms, which are not associated with an eruption, and the secondary, which accompany or follow some eruption. If there is such a thing as an essential pruritus, a true neurosis, not dependent on any systemic or local inflammatory disease, its occurrence, he thinks, is quite exceptional, and in the great majority of instances an apparently idiopathic pruritus must be looked upon as the expression of some local cause, such as irritation from a leucorrhœal discharge, or of a general disease, such as Bright's disease, diabetes, jaundice, etc.

In secondary pruritus, dependent on cutaneous irritation, the treatment is that of the skin disease by which the itching is caused. Often this is all that is required. But there are cases in which it is difficult or impossible, with our present knowledge, to cure the underlying disease altogether, those, for example, of psoriasis accompanied by itching. In such cases, so far as treatment is concerned, we must act as if they were examples of primary pruritus, that is, employ symptomatic treatment. It is only rarely, however, that this plan leads to an actual cure. The extraordinary curative action of antiseptics in many cases of pruritus of the vulva goes to show that the affection is often due to micro-organisms even when their presence can not be shown with the microscope.

In order to enter upon the treatment of primary pruritus in a rational and really scientific way, we must be able to fix upon the cause of the nervous irritation. When we have succeeded in getting the better of the original morbid condition that gave rise to the itching, the most varied hypotheses suggest themselves to explain its nature. The most plausible of them is the one that attributes this nervous irritation to poisonous products circulating in the blood, products that are developed in the system under certain circumstances. This hypothesis tallies very well with observed facts and with the conditions in which essential pruritus occurs. It is supported, moreover, by the great extent of surface often affected with itching, by its repeated occurrence and subsidence in various regions, at different hours, and on different days, by its being aggravated or mitigated coincidently with the taking of certain articles of food or particular drugs, and by the fact that in general diseases that are prone to give rise to pruritus, such as jaundice, diabetes, and gout, changes in the blood are universally conceded to exist. Whether the blood change consists in an increase of uric acid, diminished coagulability, or some other disturbance, it is not the less true that this hypothesis best accounts for the occurrence and progress of attacks of itching.

The remedies that have thus far been found most effective in the treatment of pruritus are those that either are anodyne or have a direct action on the blood. Chloral, cannabis indica, and gelsemium are included in the first class, and prominent in the second we must rate carbolic acid and the various coal-tar products that have both effects, such as antipyrine, phenacetine, etc. The use of salophene, along with some failures, has given rise to very encouraging results in many cases. What its *modus operandi* is is not known. Some would explain it by saying that it was that of salicylic acid on the arthritic condition often present in subjects of pruritus; others would attribute it to the phenol. Moreover, it is not known whether it acts as an anodyne or as an antidote.

Dr. de Wannemacker gives condensed accounts of five cases in which, together with topical treatment, he prescribed salophene internally in daily amounts of from forty-five to seventy-five grains. One of them was a case of psoriasis, and it yielded promptly, but he states that he has since tried the remedy in that disease, but without any decided results.

MINOR PARAGRAPHS.

MEDICAL LEGISLATION IN IDAHO.

The *Idaho Daily Statesman* for March 9th gives an account of an occurrence that seems to have turned the tide in favor of a medical bill that was pending in the House of Representatives of that State. We are not acquainted with the provisions of the bill, but it is to be presumed that it is of such a character as to take Idaho out of the short list of States in which the possession of a diploma carries with it the right to practise. It seems that the notorious diploma-mill known as the Wisconsin Eclectic Medical College of Milwaukee, "now located in Chicago," recently received a letter from one of the representatives in which the writer asked, in terms of studied illiteracy, that a diploma be sent to him C. O. D., for which he would pay thirty-five dollars. He represented that, unless he received a "diplomy" within ten days, he would be "shut out" by the "alopaths," who were "trying to make a law to shut out everybody that have not got a diplomy." He received the document by express, as he had requested, and when the medical bill came up for debate he told the story in the house, displaying the "diplomy," and the vote was almost two to one in favor of the bill, although it had been thought before that the prospect of its being passed was not very good.

PEDAGOGIC MEDICINE.

We are reminded anew of the fineness with which specialties are being divided, particularly in periodical literature, by a perusal of the first number of the second volume of *Die Kinderfehler, Zeitschrift für pädagogische Pathologie und Therapie in Haus-, Schule- und socialem Leben,* a bimonthy journal published in Langensalza and edited by Dr. J. L. A. Koch, of Würtemberg, Mr. C. Ufer, of Altenburg, the Rev. Dr. Zimmer, of Herborn, and Mr. J. Trüper, of Jena. In the list of collaborators we notice the names of nine gentlemen living in the United States and Canada: Dr. Thomas P. Bailey, Jr., and Professor Elmer E. Brown, of the University of California; Mr. Brockway, of the Elmira Reformatory; Professor J. B. Dresslar, of the State Normal School of California; Dr. H. T. Lukens, of Clark University; Mr. W. S. Monroe, of Stanford University; Dr. A. E. Osborne, of the California Home for the Care and Training of Feeble-minded Children; Dr. C. Renz, of Oakland, California; and Professor F. Tracy, of Toronto. Among the articles in the number under notice are one on Disturbances of the Will, by Dr. Johannes Jaeger; one on Sexual Anomalies, by Dr. J. L. A. Koch; one on Kleptomania in a Child Four Years Old; and one on Deafmutism. The journal ought to be of great interest to alienists, administrators of educational and correctional institutions, and many other persons.

THE DIAGNOSIS AND TREATMENT OF MORBID CONDITIONS CHARACTERIZED BY LOSS OF CONSCIOUSNESS.

Mr. George A. Huntley, a student in the Medical Department of the University of Vermont, has kindly sent to this office a few copies of a folded tabular statement of points made in Professor A. P. Grinnell's lectures concerning the diagnosis and treatment of these conditions. It is entitled *Differential Diagnosis and Treatment of Coma.* It deals with uræmic coma, diabetic coma, apoplectic coma, alcoholic coma, opium coma, belladonna coma, asphyxia, the coma of insolation, epileptic coma, hysterical coma, syncope, coma resulting from injury, and catalepsy. In its essential features it seems to be clear and accurate, and we have no doubt it would be of great service to the inexperienced. Mr. Huntley writes that he will send copies by mail for twenty-five cents each, bound, and fifteen cents, unbound. His address is No. 135 Loomis Street, Burlington, Vermont.

A NEW JOURNAL OF GYNÆCOLOGY.

The first number of the *Revue de gynécologie et de chirurgie abdominale* has been received at this office. It is published in Paris and edited under the direction of Professor Samuel Pozzi. The numbers are to appear every two months. The first number contains 192 large octavo pages of reading matter, three plates, and twenty-one illustrations in the text. The original articles in the number are: On Resection and Ignipuncture of the Ovary, by Dr. Pozzi; A Note on a Case of Deciduoma Malignum, by Dr. Monod and Dr. Chabry; Acute Bedsores as a Possible Complication of Vaginal Hysterectomy, by Dr. Segond; and On Gastro-enterostomy, by Professor Roux. The journal has a very attractive appearance, and we think it must take a high rank in literature.

A NEW MEXICAN JOURNAL.

The *Revista de Anatomía Patológica y Clínicas,* which recently entered upon its second volume, is a large octavo semimonthly of forty pages. The numbers for February 1st and February 15th have reached us, and we find them handsome in appearance and containing excellent matter, including abstracts from recent American journals by Dr. David Cerna, of Galveston. The *Revista* is prepared under the direction of Professor Rafael Lavista. The numbers that we have examined are well illustrated. The new journal promises to be most helpful to Spanish-speaking physicians.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 23, 1897 :

DISEASES.	Week ending Mar. 16.		Week ending Mar. 23.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever..............	5	1	7	1
Scarlet fever...............	182	7	215	7
Cerebro-spinal meningitis....	4	1	2	3
Measles....................	192	9	176	9
Diphtheria	217	35	221	34
Croup	22	9	15	4
Tuberculosis................	220	114	143	96

Marine-Hospital Service Health Reports.—The following statistics concerning yellow fever, cholera, small-pox, and plague have been received in the office of the supervising surgeon-general of the Marine-Hospital Service:

Small-pox.

Nantes, France...........	Feb. 1–28..........		4 deaths.
London, England	Feb. 29–March 6....		6 "
Bombay, India	Feb. 9–16..........		5 "
Calcutta, India	Jan. 31–Feb. 6		2 "
Cardenas, Cuba...........	Feb. 29–March 6....	400 cases,	63 "
Corunna, Spain...........	Feb. 13–March 6....		2 "
Madras, India............	Feb. 6–12..........		1 death.
Matanzas, Cuba...........	Feb. 25–March 10...	50 "	5 deaths.
Nagasaki, Japan..........	Feb. 11–18..........	4 "	1 death.
Odessa, Russia	Feb. 20–27..........	20 "	5 deaths.
Osaka and Hiogo, Japan...	Jan. 23–Feb. 20 ..	168 "	71 "
Rotterdam, Holland	Feb. 29–March 6....	1 case.	
St. Petersburg, Russia.....	Feb. 20–27..........	9 cases,	2 "
Sunderland, England	Feb. 20–27..........	1 case.	
Trieste, Austria...........	Feb. 13–20..........	2 cases.	

Cholera.

Calcutta, India	Jan. 31–Feb. 6.....		48 deaths.
Madras, "	Feb. 6–12..........		3 "

Yellow Fever.

Matanzas, Cuba...........	Feb. 25–March 10...		2 deaths.
Sagua la Grande, Cuba....	Feb. 27–March 6....	11 cases,	3 "

Plague.

Bombay, India............	Feb. 9–16		845 deaths.

The Philadelphia Meeting of the American Medical Association.—Arrangements have been made for a special train, to be known as the "Medical Buckeye Flyer," which will be made up of Pullman cars, for the accommodation of those who can not conveniently reach the "Journal Special" on account of circumstances or the locality in which they live. This train will go *via* Columbus, Ohio, where it will be joined by many of the military surgeons, who hold their annual meeting in that city just prior to the meeting of the American Medical Association. It will be a through train without change of cars to Philadelphia, over a route both picturesque and historic. Reduced rates will be made and the best of accommodations provided, care being taken in regard to the comfort of the passengers in avoiding overcrowding of cars. "Stopover" privileges at Washington have been arranged for without extra charge. Those who desire to take this train will please notify Dr. R. Harvey Reed, Columbus, Ohio.

The Brooklyn Medical Society.—At the last regular meeting, on Friday evening, the 19th inst., the programme included the following: Two papers entitled Inguinal Hernia and its Operative Treatment, illustrated by lantern slides, by Dr. George Ryerson Fowler; Septic Toxæmia from a Clinical Standpoint, by Dr. James L. Kortright; the presentation of specimens; and the appointment of a committee to meet similar committees from other medical societies to devise means by which the evils arising from medical charities, lodge doctoring, and untruthful medical experts may be corrected.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Obstetrics and Gynæcology, on Tuesday, the 23d inst., the following papers were to be read: The Ætiology and Pathology of Menstruation, by Dr. Lillian Craig Randall; The Diagnosis and Treatment of Menstruation, by Dr. H. D. Ingraham; and The Relation of Atrophic Rhinitis in Young Women to Disorders of Menstruation, by Dr. John E. Bacon.

The Brooklyn Medical Association.—At the last regular meeting, on Wednesday evening, the 10th inst., the following papers were read: Chronic Middle-ear Suppuration, by Dr. J. E. Sheppard; and The Public Abuse of Charities and Dispensaries, by Dr. A. C. Brush.

The Richmond Academy of Medicine and Surgery.—At the last regular meeting, on Tuesday evening, the 23d inst., a discussion on Perineal Section without a Guide for Impermeable Stricture was to be opened by Dr. Thomas R. Marshall, of Bedford City, Virginia. A paper entitled Some of the Socio-medical Problems that Confront the Physicians of Richmond was to be presented.

Tuberculous Disease in Children.—At the opening of the new lecture room of the Boston Infants' Hospital, on March 17th, Dr. W. P. Northrup, professor of children's diseases in the Bellevue Hospital Medical College, of New York, addressed, by invitation, the students of the Harvard Medical School on Tuberculous Disease in Children. The lecture was illustrated by lantern slides, and excited much interest.

The Antitoxine Treatment of Diphtheria.—We learn that the American Pædiatric Society's report of its second collective investigation will be held open until April 10th, in order to include returns of cases beginning before April 1st. The blanks have been more perspicuously arranged than those of the first investigation. The committee desires to express its appreciation of the trouble and pains the profession have been willing to take in this matter.

A New Mississippi Journal.—It is announced that the first number of the *Medical Record of Mississippi*, a monthly journal, will be issued on the 1st of April. The editor and proprietor is Dr. H. H. Haralson, of Biloxi.

The American Veterinary College held its annual commencement exercises in Chickering Hall, New York, on Thursday evening, March 25th.

Changes of Address.—Dr. Park A. Findley, from Des Moines to Laurel, Iowa; Dr. I. L. Nascher, to No. 119 East Seventy-sixth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 14 to March 20, 1897:*

A board of officers, to consist of Banister, John M., Major and Surgeon, McEldeery, Henry, Major and Surgeon, and Lippitt, William F., Captain and Assistant Surgeon, is appointed to meet at Fort Leavenworth, Kansas, on Tuesday, April 13, 1897, at 10 o'clock A. M., for the examination of such officers of the medical department as may be ordered before it to determine their fitness for promotion.

A board of officers, to consist of Huntington, David L., Lieutenant Colonel and Deputy Surgeon General, Reed, Walter, Major and Surgeon, and Gandy, Charles M., Captain and Assistant Surgeon, is appointed to meet at the Army Medical Museum Building, Washington, D. C., on Tuesday, May 4, 1897, at 10 o'clock A. M., for the examination of such officers of the medical department as may be ordered before it to determine their fitness for promotion.

Sternberg, George M., Brigadier General and Surgeon General, and Huntington, David L., Lieutenant Colonel and Deputy Surgeon General, are detailed to represent the medical department of the army at the Twelfth International Medical Congress to be held in Moscow, Russia, August 19 to 26, 1897.

Ware, Isaac P., First Lieutenant and Assistant Surgeon, Woodson, Robert S., First Lieutenant and Assistant Surgeon, and Deshon, George D., First Lieutenant and Assistant Surgeon, are ordered to report in person to Huntington, David L., Lieutenant Colonel and Deputy Surgeon General, president of the examining board, at such time as they may be required for examination for promotion.

McCulloch, Champe C., Jr., First Lieutenant and Assistant Surgeon, Reynolds, Frederick P., First Lieutenant and Assistant Surgeon, and Brewer, Madison M., First Lieutenant and Assistant Surgeon, are ordered to report in person to the president of the examining board appointed to meet at Fort Leavenworth, Kansas, for examination for promotion.

Munn, Curtis E., Major and Surgeon. Granted leave of absence for one month.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending March 20, 1897:*

Beyer, H. G., Surgeon. Detached from the U. S. Steamer Newark, March 17th, and ordered home to await orders.

Carpenter, D. N., Assistant Surgeon. Detached from the U. S. Naval Laboratory and Department of Instruction, Brooklyn, and ordered to the U. S. Steamer Brooklyn. March 15th.

Derr, E. Z., Surgeon. Detached from the U. S. Steamer Columbia, on being relieved, ordered home, and granted leave of absence for three months.

Dunbar, A. W., Assistant Surgeon. Detached from the U. S. Steamer Newark, March 17th, and ordered to the U. S. Steamer Vermont.

Moore, J. M., Passed Assistant Surgeon. Ordered to the U. S. Steamer Alert upon the arrival of that vessel at Mare Island, California.

Pleadwell, F. L., Assistant Surgeon. Detached from the U. S. Naval Laboratory and Department of Instruction, Brooklyn, and ordered to temporary duty on the U. S. Steamer Constellation. March 15th.

Simons, M. H., Surgeon. Detached from the Torpedo Station, Newport, Rhode Island, April 15th, and ordered to the U. S. Steamer Columbia.

Spratling, L. W., Passed Assistant Surgeon. Detached from the U. S. Steamer Alert, upon being relieved, ordered home, and granted leave of absence for three months.

Society Meetings for the Coming Week:

Tuesday, *March 30th:* Boston Society of Medical Sciences (private).

Wednesday, *March 31st:* Auburn, N. Y., City Medical Association; Berkshire, Massachusetts, District Medical Society (Pittsfield).

Thursday, *April 1st:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *April 2d:* Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Medical Society of Saratoga Springs, N. Y.

SATURDAY, *April 3d:* Manhattan Medical and Surgical Society (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

DARLINGTON—IRBY.—In Laurens, South Carolina, on Thursday, March 11th, Mr. Thomas D. Darlington and Miss Lyde Toccoa Irby, daughter of Dr. W. C. Irby.

Died.

EWELL.—In New York, on Monday, March 22d, Dr. Douglass Ewell, in the thirtieth year of his age.

LAMBERT.—In New York, on Sunday, March 21st, Dr. Thomas Scott Lambert, aged seventy-eight years.

MOBLEY.—In Shreveport, Louisiana, on Saturday, March 20th, Dr. W. J. Mobley, in the sixtieth year of his age.

Letters to the Editor.

DIAGNOSE OR DIAGNOSTICATE?

1 WEST FRANKLIN STREET, BALTIMORE, *March 19, 1897.*

To the Editor of the New York Medical Journal:

SIR: In a recent issue of the *Post-graduate* the following statement occurs: "By the way, we were surprised to hear a man of Dr. Osler's literary culture, exhibited as a professor in Montreal, Philadelphia, and Baltimore, use the barbarism of 'diagnose.' Certainly Canadians know better than that, and as to Philadelphians, we can see them lifting up their hands in horror at the employment of such a word."

Reviewers of my text-book (in which I have used the word exclusively) have on several occasions referred to its use as anomalous, so that I am glad to have this opportunity to make a remark upon the subject. The editor of the *Post-graduate* will no doubt be surprised to hear that diagnosticate is confined entirely to the United States, and I have more than once in English reviews of American books seen the term "barbarism" applied to it. So far as I know the word, it is not employed in England, nor in any English work; it is never used in Canada. I remember well how oddly the word sounded in my ears when I first heard it at a meeting of a medical society in New York in 1881. The word "diagnose" is found in all good dictionaries, and, though "diagnosticate" is more correct etymologically, yet universal usage in the English-speaking profession, except in this country, is a sufficient warrant for its employment.

Professor Gildersleeve tells me that he is almost as bitter an enemy of "diagnose" as of "enthuse"; but another literary friend who had seen the above-mentioned criticism writes: "You are amply fortified by authority and usage, and there is not the ring of affectation in it that we find in the polysyllabic word 'diagnosticate.'"

WILLIAM OSLER, M. D.

⁂ We wish to express our agreement with Professor Gildersleeve.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of January 6, 1897.

The President, Dr. LUCIUS W. HOTCHKISS, in the Chair.

Osteo-sarcoma of the Superior Maxilla.—Dr. J. W. S. GOULEY exhibited a patient from whom he had removed the right upper maxilla for osteo-sarcoma, with the following history:

J. M., twenty-one years of age, had been admitted to Bellevue Hospital on the thirty-first day of October, 1896, in good general physical condition, but having a tumor involving the right malar and superior maxillary bones, which had begun soon after the reception of a blow, in the right zygomatic region, from a stone, about four inches in diameter, flung in play by a boy two years prior to the patient's admission to the hospital. The immediate effects of the contusion had not been perceptible two weeks later. Shortly after this he had noticed some tumefaction, which had slowly but steadily increased, and had finally involved the whole superior maxillary bone and about one fourth of the malar. At no time did the tumor cause pain, and it had not been tender under pressure. During the three weeks prior to his coming to the hospital he had thought that the growth was increasing at a more rapid rate than before, and on this account had sought medical advice. The right cheek had then been unduly prominent; the orbital plate had appeared to be so much raised as to cause some extrusion of the eye, the sight of which had been a little impaired; the nasal process had been decidedly enlarged, half of the hard palate had been depressed from thickening of the bone, and the alveolar process had bulged to an inordinate degree.

Removal of the tumor was advised and effected on the 10th of November, 1896. The patient having been etherized, a preliminary tracheotomy was performed, and anæsthesia continued through the tracheal tube. The pharynx and larynx were closed by means of a sponge. A curvilinear incision down to the bone was made along the edge of the orbit, and a second incision vertically from below the inner canthus of the lids to and through the upper lip. The flap thus made was dissected as far outward as the body of the malar bone, preserving the labial mucous membrane and the part thereof reflected upon the alveolus. A longitudinal incision was made through the soft parts over the hard palate about a quarter of an inch to the right of the median line, extending from the palate bone forward, and a transverse cut across the posterior edge of the palatine process of the superior maxillary. The right incisor tooth was extracted and the anterior part of the maxilla divided along the median line by means of Isaacs's bayonet-shaped bone forceps. With the same instrument the malar bone was cut close to its articulation with the jaw and also in part the nasal process through its base. The chisel and mallet served to loosen the bone, which was then grasped and detached with Farabeuf's forceps. A few sections with the scalpel were sufficient to divide the buccinator, masseter, and external pterygoid muscles close to their attachments, when the whole bone, together with a part of the malar, the palate, and inferior turbinated bones, was removed from its bed. The soft palate was intact. Nearly all of the remainder of the nasal process and the adjoining part of the malar bone were removed by means of a gnawing forceps. The hæmorrhage, which was not great, was controlled by quick seizure with artery clamps of the bleeding vessels, which were leisurely tied with catgut. The subsequent oozing was stopped with hot sponges. The flap was stitched with catgut and the wound cavity packed with sterilized gauze. The tampon tracheal tube of Gerster was replaced by a double tube. The external wound having healed primarily, the packing was renewed on the third day. Liquid food was administered by the rectum for three days and then by the mouth with the aid of a catheter passed into the pharynx. There had been comparatively little febrile reaction during the progress of the case, the temperature having risen to 102.8° on the day of the operation and on the fifth day. On the seventh day the tracheal tube was removed. On the eighth day the patient sat up. He began to take fluid food in the natural way on the ninth day. The wound cavity had continued to be lightly packed every day for two weeks and had been rapidly decreasing in dimension. The tracheal wound had been completely closed in three weeks from the date of the operation. The sight of the right eye had been restored soon after the operation. The preliminary tracheotomy had been of the greatest assistance in the operative procedure, and the pharyngeal sponge had prevented the swallowing and inspiration of blood. Thirty days after the operation the patient had been fit to leave the hospital, had been able to speak with fair distinctness, and had again been in good physical condition. How soon the growth might recur remained for future observation. At this time, fifty-seven days since the operation, the cavity was lined with granulation tissue and was still contracting. The facial deformity was slight.

Examination of the excised jaw, which was exhibited, showed the bone to be much increased in size and weight, and a typical example of compact osteo-sarcoma. The teeth were in good condition. The third molar was missing and probably had not come through. The alveolar process over the incisor, canine, and bicuspid teeth bulged so inordinately as to obliterate the incisive and canine fossæ. The infra-orbital foramen was half an inch below the margin of the orbit. This margin was rounded and thickened and the muscular attachments of the region were displaced downward. The posterior surface of the bone was much more convex than normal. The maxillary tuberosity was firmly ankylosed to the tuberosity of the palate bone. The orbital surface extended much farther posteriorly than in the normal state. The infra-orbital groove had disappeared, while the infra-orbital canal was of normal calibre, but increased in length. The vertical process and the orbital plate of the palate bone were ankylosed and lost in the new growth. The palatine process was greatly thickened and ankylosed to the horizontal plate of the palate bone. The antrum was nearly obliterated by the new growth, which left only a narrow slit along the inner wall of the cavity. What appeared to be the maxillary fourth of the malar bone was much increased in thickness and lost in the new growth. The jaw, minus its nasal process, after being deprived, by steaming, of the soft parts, weighed, when dry, twelve drachms and a half, or more than twice the weight of the normal bone. The greater part of the detritus resulting from the use of the gnawing forceps had been lost. The inferior turbinated bone was solid and hard. The volume of the bone was unchanged, the increase being interstitial. It weighed, when dry, thirty-one grains, or more than six times the normal weight. The bones were of a yellowish tint, which was retained even after drying.

Microscopical examination of the bone, after decalcification and section of small portions of it, had revealed a great abundance of small spindle cells, a few round cells, and very few giant cells. The stained sections had been compared with two other specimens of decalcified osteosarcoma through the kindness of Dr. Jeffries. In these other specimens, one of which had been removed by Dr. Abbe, there were many giant cells, and the spindle cells were large, while in those from J. M.'s jaw the giant cells were few and the spindle cells many and small.

Sero-diagnosis of Typhoid. A Study of its Practical Clinical Value, with a Demonstration of the Blood Reaction.—Dr. J. Winters Brannan read a paper with this title (see page 413).

Dr. Egbert le Fevre said that he had examined the blood of a hundred and twenty-five individuals, making a hundred and eighty-five separate tests. He had applied the test in six cases of septicæmia and seven cases of pneumonia. Of these seven, six had been negative. One of these cases had been admitted a few hours after the chill, and there had then been no physical signs of pneumonia. A specimen of the blood had been taken at that time, and no reaction had been obtained. Four days later, the physical signs had become well marked, and the encapsulated diplococcus of Fraenkel had been demonstrated in the sputum. Another test of the blood at this time had given a positive and instantaneous typhoid reaction. The "clumping" had been well marked, and the motion at once inhibited. Another examination, three days later, had given the same reaction. On the eighth day of the pneumonia, the disease terminating by lysis, a weaker reaction had been obtained. On the fourteenth day, when the temperature had reached normal, and resolution had been well advanced, there had been absolutely no reaction. Subsequent examinations of this case had given no reaction. The case had been under the same treatment as the other cases of pneumonia which had been examined at the same time with negative result. Eleven cases of phthisis had also been examined with negative result, although two of these had been cases of acute miliary tuberculosis, and from the clinical appearances there had been a suspicion of typhoid fever. Eleven cases of rheumatism had been subjected to the test, eight of them being acute. All of these had given a negative result. Six cases of cirrhosis of the liver had given a similar result. Two cases of acute hepatitis, two of nephritis, and two of obstructive jaundice, and several cases of dysentery had been examined, all with negative result. Seven cardiac cases had also been examined. One of these patients was still in the hospital. The blood of this one had been examined seven times, and there had been a reaction, but not so typical as that of some of the cases of undoubted typhoid fever. A careful inquiry into the history of this patient had given no evidence of her having had typhoid fever at any previous time. Six cases of malarial disease had also been examined. The blood had been taken in all cases during the height of the fever. In all the result had been negative. The presence of the plasmodium had been demonstrated at the same time.

The test had next been applied to five cases of "continued fever," or unclassified fever. No plasmodia had been found in these cases, and the subsequent history had only given ground for a suspicion of typhoid fever. In all these cases the result had been negative. The blood from one cases of illuminating-gas poisoning had been examined a few hours after admission, with a negative result. Nine cases of carcinoma had been examined, one of them being a case of carcinoma of the pyloric region of the stomach. Eight examinations had been made of this case, and every one of them had given a typical typhoid-fever reaction. The patient was an intelligent woman, and she stated absolutely that she had never to her knowledge had typhoid fever. Two cases of carcinoma—both of the uterus—had also given a suspicious, although not a typical, reaction. Repeated examinations had given the same result. Five cases of epithelioma had given no reaction.

The test had been applied in eleven cases of undoubted typhoid fever. The first of these cases had been examined on the twentieth, twenty-sixth, twenty-ninth, and forty-fifth days of the disease, and had given a typical reaction. The second case had been examined on the seventeenth, twenty-fourth, twenty-sixth, and forty-second days of the disease. It had always reacted somewhat imperfectly, the reaction being developed slowly, and the inhibition of motion not being uniform throughout the specimen. Some portions had been agglutinated and without motion; others had been loosely clumped together. On the forty-second day of the disease, strangely enough, the reaction had been the most typical of all. The third case had been examined on the twenty-fourth and thirtieth days, and had yielded a prompt reaction. The fourth case had been examined on the forty-first day, or when the patient had been practically convalescent. At this time the reaction had been very prompt and satisfactory. The fifth case had been examined on the ninth day for the first time. The loss of motility had been prompt, but the bacilli had agglutinated very slowly. On the eighteenth day the reaction had been much more rapid and satisfactory, and on the twenty-first day it had been very marked. The sixth case had been examined on the eighth day. The reaction had been so very slow that at first the case had been thought not to be one of typhoid fever. On the twenty-ninth day, however, the reaction had been prompt. The seventh case had been examined on the thirteenth day, and had given a prompt reaction. The eighth case had been examined on the thirteenth day, and had given a prompt reaction. The ninth case had been examined on the tenth day of the disease, but with a negative result. This case had been complicated with pneumonia. On the twelfth day there had been a marked reaction, but it had not been until the fifteenth day that the reaction had been characteristic. The pneumonia complicating it had run a typical course. The tenth case had been seen soon after the onset of the disease. The man had been taken with a severe chill on a Wednesday night, and had been seen by the speaker in consultation on Friday night. At that time the headache, pain in the back, etc., had led to the suspicion of malarial fever or meningitis. An examination of the blood had been made on the third day, with a negative result, and the reaction had not appeared on any day up to the sixth. At this time the reaction had been very prompt, although the blood of the previous day had given a negative result. The blood had been examined almost daily until the twenty-first day, when he had died from intestinal hæmorrhage.

Dr. Le Fevre said he had adhered to the method of growing the bacilli on agar-agar, for the bouillon he had found unsatisfactory unless it had been made with extreme care. He made a thorough emulsion of the bacilli in distilled water, and used this for the examination. Instead of using the ordinary ground-glass slide with a depression, he used vulcanite rings, and found them very convenient. By smearing both sides of the vulcanite ring, a hanging drop of almost any size could be obtained, and as many of them on a cover glass as was desired.

Dr. W. H. Park said that we could hardly expect the reaction on the first day. He had injected guinea-pigs with a pure culture, yet absolutely no reaction had occurred in the blood until the sixth or seventh day. After that, a marked reaction had been suddenly developed. From these experiments, and from the experiments of Pfeiffer on the human being, it was evident that we should not look for the reaction at the very beginning of the disease. A number of cases had come to him for examination in which marked reaction had occurred on what was stated to be the second day of the disease, but it should be remembered that it was often very difficult to determine the exact day of the disease. He did not think more than sixty per cent. of the cases gave a reaction within the first week, and about seventy per cent. in the first fourteen days. Probably nine tenths of all the cases gave the reaction after the second week. There could be little doubt about the case of Lang, reported by the reader of the paper, being one of typhoid fever; yet from an examination of the blood there was no reason for believing the disease to be typhoid fever. There were two cases now at the Mount Sinai Hospital, and a case at Roosevelt Hospital, running the clinical course of a mild typhoid fever, yet no decided reaction had been obtained from the blood. Probably in from five to ten per cent. of the cases no typhoid reaction had been obtained.

Regarding the duration of this reaction, the speaker said that at first he had expected that this reaction would be obtained for four or five years afterward, but further study had shown that usually in the course of three or four months the reaction practically disappeared. It was exceptional for the reaction to appear later; hence, if one obtained a marked reaction, one could be pretty certain that it was due to a present typhoid fever, or one which had occurred only a few months previously.

As to whether it occurred in other diseases than typhoid fever, the speaker said that one must be very cautious in drawing conclusions. There had been a negro woman in the Roosevelt Hospital who had been admitted with what was supposed to be appendicitis. An examination of the blood had seemed to indicate typhoid fever. A week later another examination of the blood had been made, and the reaction had been very marked. The fever having passed away, an operation had been performed a week later, and a malignant tumor of the intestine had been found. The woman had been so ignorant that no reliable previous history could be elicited. He had only met with two cases of diseases other than typhoid fever in which a marked typhoid reaction had been obtained. Counting in two others reported to-night, there were four cases out of probably about five hundred cases that had been examined. It was evidently not a very common occurrence.

Regarding the manner of performing the test, Dr. Park said that his opinions had undergone material change as he had proceeded with the work. At first, he had been decidedly in doubt regarding the reaction itself. Now, he believed that it must take place immediately; he certainly would not care to draw conclusions from any reaction that might develop after half an hour. A reaction obtained after this time might be from a case of typhoid fever, but he certainly would not designate it a typical typhoid reaction. He had come to the conclusion that early in the disease the test might occasionally help in diagnosis; that later it would be a decided help, and that not finding it did not necessarily exclude typhoid fever.

Dr. **Frank W. Jackson** said that he wished to express his thanks to the reader of the paper for the very clear and fair way in which our present knowledge of this subject had been presented. Personally, he wished to speak from the standpoint of a clinician, as he did not profess to have any special knowledge of bacteriology. The question to be asked, from the standpoint of the clinician, was: "What is the value of this test in the diagnosis of typhoid fever?" The answer was, it seemed to him, that at the present time the value was not very great. The cases which had been quoted showed that Widal's reaction was occasionally present when there was no typhoid fever, and *vice versa;* therefore, at present the clinician must continue to make his own diagnosis, no matter what might be the report of the bacteriologist. He did not wish to be understood as saying that the test had no value, but it certainly seemed to him there was still much to be learned in regard to the test and its limitations. That there might be much which was trustworthy in the test was shown by the fact that the blood from a large number of cases in which there could be no suspicion of typhoid fever, or other fevers, had been sent to the board of health from his wards at Bellevue Hospital, and in every one of these cases the board of health had reported no reaction.

The speaker then referred in detail to several of the cases mentioned in the paper. He said that one patient was a negro with but little intelligence, who had come to the hospital complaining only of pain in the ankles. His temperature had been about 103° F., and there had been no evidence of an acute inflammation about the ankles. The physical examination had been negative throughout. The supposition had been that the case was one of rheumatism, and after treatment for this condition for a few days the temperature had fallen to 99°. It had remained at this point for a few days, and had then risen again. The temperature keeping up, and being irregular, the original diagnosis had been questioned. Just at this time the man had had a general small vesicular eruption all over the body, sudamina. About a week or ten days after this he had shown superficial points of gangrene between the toes of both feet, together with complete anæsthesia of all the toes. The pain had then disappeared and the temperature had fallen nearly to normal. The gangrenous spots were now healing, and he now seemed perfectly comfortable, and simply had anæsthesia about the toes. He would like to know the correct diagnosis in this case—did it look like typhoid fever? If so, he had learned something new about typhoid fever.

Another, he said, was also a negro who had come in with a temperature of 104°, and with a red and swollen tonsil, and his had, at first, been thought to be a case of suppurative amygdalitis. His history, however, had indicated that he had had a cough and malaise for some time, and that he had raised blood. His blood had given a positive reaction for typhoid fever. His physical examination had been entirely negative, and the tubercle bacillus had not been found in his sputum. At the end of three weeks the temperature had come down to 99.5°. This had been, perhaps, a case of typhoid fever, but it was quite as likely that it had been one of miliary tuberculosis of the lungs.

He was positive that the patient Lang had had typhoid fever, for he had presented all the characteristic evidence of that disease—the appearance of the face and of the tongue, the dicrotic pulse, the tympanites, the eruption, etc. Here the bacteriological examination of the blood had failed to give the reaction to Widal's test; yet no clinician could doubt that the case was one of typhoid fever.

Another patient, Bradley by name, had entered the hospital with an entirely different history. A week or ten days prior to admission he had begun to vomit. He had had a temperature of 103° on admission. There had been no enlargement of the spleen, but apparently a typical typhoid eruption. The report from the board of health had shown that the examination of the blood had been negative. At the end of two weeks the temperature had been normal. This case certainly looked like one of mild typhoid fever.

About the same time, a Swedish boy of sixteen had been admitted, with no history except that he had had pain in the left lumbar region for two weeks prior to admission. The physical examination had been negative; the temperature had been 103°. The temperature had varied about two degrees each day. His blood did not show the plasmodium. The first report from the board of health had said that the reaction was uncertain, and a very recent examination was distinctly negative. The boy had then been given quinine, night and morning. In spite of the quinine the case had pursued the course of a typhoid fever, and this seemed the most probable condition. It was evident, then, that in a certain number of cases the clinical diagnosis was quite clear, and therefore we did not need the help of the bacteriologist. On the other hand, in a certain number of cases in which we could not tell what was the matter with the patient, the bacteriologist seemed to be equally uncertain.

Dr. **J. S. Thacher** said that the opinions already expressed in this discussion coincided very closely with his own views, derived from his personal experience with the test. He had first taken it up with a good deal of skepticism, but had been delighted to find how uniformly the bacteriological test had coincided with the clinical diagnosis. The number of exceptions that he had met with had been small—certainly small compared with those of other clinical tests that we used in medicine. He would indorse the conservative conclusions expressed by Dr. Park. We should bear in mind always the personal source of error on the part of the observer. It was necessary that the observer should have had considerable experience, for the line between failure and success in obtaining the reaction was not a sharp one. Then there was the difference in regard to the length of time that the blood from different cases required for the development of the reaction. He was glad to hear Dr. Park say that he now made it a rule to exclude those cases in which the reaction developed very slowly. Again, there was the uncertainty resulting from differences in the culture used. He had followed the rule of always employing a fresh bouillon culture—one not more than twenty-four hours old—but even then he had occasionally met with cultures in which the clumping, even without the addition of blood, had been considerable. Results might also differ with variations in the amount of serum used in the test.

There was another lesson to be learned from the discussion this evening. The general medical man was apt to hold an extreme opinion regarding the value of pathological reports—either that they were absolutely of no value, or that they were absolutely infallible. He would urge that the reports of pathologists should be weighed along with the clinical evidence, and taken in the same way. The pathologist should, at the same time, endeavor to indicate how conclusive he considered the evidence that he presented. A pathological report expressing doubt was often a much safer guide than one which assumed to present a final decision.

Dr. **Alexander Lambert** said that he would take an intermediate position between Dr. Jackson and Dr. Park, as he was both a clinician and a bacteriologist. It seemed to him extremely important to remember that there was a physical limit to the reaction, and the amount of blood mixed with the culture was an important factor in making the test, and also that the reaction must be immediate, particularly as regarded the inhibitory action on the motility of the bacilli; the clumping might come later. He had been aided by this test in making the diagnosis in two doubtful cases recently, the test giving a marked and positive reaction. The subsequent clinical course had amply confirmed the test. This test was, of course, still in its experimental stage, but our present knowledge seemed to indicate that we had in it a very valuable aid to the diagnosis of typhoid fever in some doubtful cases. As with all the symptoms and signs of typhoid fever, the test must be considered in conjunction with the whole clinical picture.

Dr. **Henry P. Loomis** said that he was sorry that Dr. Brannan had not stated his conclusions regarding the value of the test. Personally, he had been impressed at the outset with its accuracy in cases giving clear evidence clinically of typhoid fever. At the New York Hospital he had had thirty examinations made in December, fifteen being in typical cases of typhoid fever. Every one of these had given a distinct and unquestionable reaction. Examinations had also been made in ten cases which had not been typhoid fever—*e. g.*, phthisis and rheumatism. The result in all these had been negative. Five cases had been reported as giving an undefined or partial reaction. Of these, one had been a case of undoubted typhoid fever, judging from the clinical standpoint. Another had been a case of bronchitis, which had given a doubtful reaction at first and a negative result afterward. The third had been in a Cuban who had had a fever of doubtful nature. The two other cases had not appeared clinically to be typhoid fever. He would say, therefore, that the reaction in typhoid fever was positive, but that it was not a great aid to the diagnosis, because in the second week the clinical evidence was usually sufficiently clear. He had never seen the reaction before the eighth day. He had observed it a month after recovery from typhoid fever. In the cases in which the clinician was most in doubt, the test was very apt to give a doubtful reaction.

Dr. **N. E. Brill** wished to say a few words in reference to the important subject under discussion, inasmuch as he had had the fortunate opportunity of conducting a series of observations in the cases of thirteen nurses sick with typhoid fever at the Mount Sinai Hospital Training School. These observations had been the results of most careful tests of the Widal reaction made by the assistant pathologist of the hospital, Dr. Charles A. Elsberg, who had charge of the bacteriological work relating to these and other cases at the hospital. All of the nurses who had been sick had suffered with typhoid fever. Of the thirteen, up to this time eleven had given positive reaction to the Widal test; however, two of the cases had as yet given no positive reaction. It should be said, moreover, that all the patients had given indefinite symptoms of illness extending from ten to fourteen days before each had taken to bed. After they had taken to bed—all had been sick in bed within three days of the time that the first nurse had given up—the Widal test had been immediately instituted. One case had given a positive reaction as early as the third day after being confined to bed; the twelve others had only shown the first positive reaction in periods varying between eight and ten days after confinement. Taking into consideration the fact that the period of illness before going to bed had extended between ten and fourteen days, most of the patients at the present time were apparently in the third week of their disease.

One of the interesting features of his observations of this reaction had been this: two patients, and they were perhaps suffering with a more intense infection—they were the most seriously ill—had up to the present time not given a positive reaction at any time.

He wished to say here that specimens of blood had been taken daily from all of these cases and thoroughly tested by Dr. Elsberg, so that the results of the observations could not be questioned. Yet, in the two cases just mentioned, all the characteristic symptoms of typhoid fever had been present, and except in intensity they did not differ clinically from the other eleven. This observation coincided with the results that had been reported in a recent number of the *Lancet* by Dr. Durham and in another article in the same journal by Dr. Gruenbaum. Of the cases of the latter, one had been under observation throughout the entire course of a typhoid and for eighteen days after convalescence had occurred, and still during no period of this time had a positive Widal reaction been obtained. Durham had reported two similar cases.

As to the time that the reaction persisted, Dr. Brill stated that Widal said it disappeared after the forty-first day. This appeared to him to be still a question to be determined. Some observers claimed a much longer period of persistence of the reaction. So far as his own observations went, in his own case, having been a victim of a most severe typhoid, with three distinct relapses, covering a period of illness in bed extending over three months and incapacitating him from work for seven months, which had occurred just two years ago, a test of his blood a few days ago had given a negative reaction. The speaker further stated that his house physician at the hospital had had an attack of typhoid extending over September into October of this year, and at the end of November and early in December no positive reaction could be obtained.

He indorsed the conservative opinion expressed by Dr. Park in the discussion. Undoubtedly the test was an important aid to diagnosis, especially in doubtful cases. In ordinary cases it was not of much value except as corroborative, for since the blood reaction appeared only after the eighth to tenth day, the clinical signs were sufficient at that time to establish a true diagnosis. He regarded it of most value in deciding the nature of cases of continued fever in which a suspicion of typhoid, not justified, however, by clinical signs, might arise.

Before closing, he wished to call attention to a point which had not been touched upon or mentioned by any of the previous speakers, and it was one of most interest and importance to him, since he could not explain it satisfactorily.

The point was this, that two of his cases had shown a positive reaction for a few days, after which the reaction had disappeared for an entire day, to reappear again, however, on the day following its absence. The criticism might be made that the inability to obtain the reaction was due to a fault in technique or to some trouble with the pure culture itself. This criticism, however, must be void, because the same pure culture which had been used to obtain the test with the blood which did not show the reaction on an intermediate day, had given positive results with the blood of the same patient which had shown the reaction on the day before.

He regarded no result as a positive test unless there was "clumping" of the bacilli, together with rapid inhibition and finally total cessation of movements in the bacilli. Clumping alone could not be regarded as a positive test, for that reaction had occurred in the blood of a patient suffering from erysipelas, in one from pneumonia, and in one from Bright's disease, as he was informed by Dr. Elsberg. Even normal blood in proportion of more than one to six produced clumping.

Book Notices.

The Diseases of Infancy and Childhood. For the Use of Students and Practitioners of Medicine. By L. Emmett Holt, M. D., Professor of Diseases of Children in the New York Polyclinic, etc. With Two Hundred and Four Illustrations, including Seven Colored Plates. New York: D. Appleton & Company, 1897. Pp. xvii–1117. [Price, $6.]

However disappointing may have been the delay in the appearance of this long-promised work, it is certainly the only disappointment connected with it, and now that the book has appeared the delay becomes a source of satisfaction, for it has resulted in a carefulness and well-considered thoroughness of preparation which contrast very strongly with the hurried complexion of many another work which otherwise is good, and contribute more than any other factors to make this production remarkable. Another thing, too, which marks the superior character of the book is its originality, by which we are far from meaning a sensational differing from established beliefs, but a disposition to break away from the unproved dicta of early writers, a disposition to test and to prove or else to disprove views concerning the matters of which the book treats, and, finally, to present as facts those things of which the fullest testing has been the proof. For a work like this the author has had remarkable clinical opportunities, but no opportunities are sufficient unless properly appreciated and turned to account. Dr. Holt, however, has fully appreciated these opportunities and has made use of them to their full capacity, and as a result of a vast amount of clinical material of a long period of time, or great study and almost endless work, of a desire and an ability to analyze and to prove, and of a somewhat unusual aptitude forcibly for presenting and teaching vividly, he has given us a work upon pædiatrics whose equal we believe does not exist.

Part I of the book is general in its scope and suitably introduces the subject by a discussion of the hygiene and general care of children, of growth, and of development. It concludes with a remarkably instructive chapter upon the peculiarities of disease in children. The final pages of this chapter concern therapeutics, and, notwithstanding the many able and valuable features of the work, none has more strongly impressed us than this discussion of treatment. In it there is no disparagement of the use of drugs, it is true, but there is the most forcible condemnation of their overuse and their abuse. The age of "drugging" is happily now passing, if not already past, but many even yet fail to appreciate that infantile therapeutics is something more than adult therapeutics reduced by a mathematical formula. The neglect of nonmedicinal treatment and the too great dependence upon drugs are here most strongly deprecated, and rationally at the same time, and we are convinced that the lesson thus taught can not fail to be of great benefit unless the reader is prepared to combat the position of another well-known authority as expressed in the words "It is to be remembered that in young children all drugs may do harm, and that too little treatment is better than too much." In the discussion of drugs by classes the author has usefully presented the medicinal agents suitable for employment with infants, but we would suggest that the inclusion of chloral and belladonna in the class of anodynes should be a matter for correction in the second edition, for, though locally anodyne, it is true, their systemic action in therapeutic doses is not to relieve pain (unless by chance it is dependent upon spasm), and it is their systemic action which is here discussed.

Part II is specific and is divided into ten sections. In Section I are discussed the diseases of the newly born, and we note in it a completeness which is unusual, and at the same time a directness and a pointedness of expression which, though not sententious to terseness, are quite the opposite of loquacious, and lead one to the delightful realization that completeness, even in matters medical, does not demand wordiness; in short, that enough is sufficient.

Section II is on nutrition, and primarily discusses foods and feeding. Now, infant feeding, it often seems, has been, in the literary sense, overdone. Doubtless there is great importance in the subject, and doubtless, too, we have not yet exhausted its possibilities; but we frankly think that the field has been an excellent one for fads and fancies. From the voluminous utterances of such faddists, therefore, it is a relief to turn to the writings of one who, while duly appreciating the importance of his subject, is yet actuated by the soundest common sense. We read these chapters on food and feeding, therefore, with enjoyment and appreciation, and we think we understand what we read, for, be it noted, these pages are readable and not analysis-and-formula-laden to distraction and incomprehensibility. In discussing human milk the author has interesting information to present as to the elimination by it of drugs taken by the mother and as to their effects upon the nursling. So much of mystery and ill information has surrounded this question that the author's words are of great interest. It would seem that many of the drugs hitherto credited with power to affect the child thus are inert; but further experimentation is necessary, we think, before the subject can definitely be known and limited. This part concludes with well-arranged presentations of disorders of nutrition from inanition through malnutrition, marasmus, scorbutus, and rhachitis.

With Section III begins the presentation of digestive disorders. The field is a large one and we can not do more than speak of the excellence of the section in general terms and testify to its remarkable completeness and lucidity. As "cyclic vomiting," the author introduces a disorder marked by attacks of vomiting and general depression occurring at varying intervals. As he very truly says, "this condition is one which has received but little attention." We are of the opinion that this disorder is of hepatic origin, in fact, is a functional disorder of the liver akin to what is popularly known as a "bilious" attack. The author inclines to a similar belief, for he points out the fact that gray stools are exceedingly likely to precede an attack, and, in another portion of the book, speaking of functional disturbance of the liver, he suggests the possible dependence of cyclic vomiting upon it. That we know little of hepatic and duodenal chemistry is true, but the rarity with which authors allow infants any hepatic disorder save an organic one is noticeable, and again the author of this work is pleasantly contrasted with many of the older writers. Clearly, the infant may enjoy the luxury of being "bilious" or lithæmic as well as his elders. We can not pass the discussion of digestive disorders, however, without calling attention to the chapters upon gastro-enteritis, cholera infantum, colitis, and ileo-colitis. They are of the greatest interest and value, and, while lengthy as compared with many portions of the work, are not so in comparison with the importance of the subject. They will afford a vast amount of information of the most practical kind to the careful reader, and are rivaled only by the chapters upon pneumonia for their strength of presentation.

Section IV contains the matter upon the diseases of the respiratory system, and again we must regret that we can not devote more space to consideration in detail. As already implied, the section on the pneumonias is a remarkable presentation, and, though the classification is somewhat unusual, it is not radically at variance with the usual classification and clearly, too, is founded upon well-defined clinical types. As to the question of treating empyema by aspiration, the author grants that it may occasionally be effective, and certainly childhood offers some reason for the practice which adult years do not. Nevertheless, his conclusion that early incision and drainage are the appropriate treatment is not likely to be seriously combated; certainly it is not by us.

The diseases of the circulatory system are discussed in Section V, and those of the uro-genital system in Section VI. Each is as complete as the character of the book demands and fully in keeping with its standard of excellence. When the author speaks of enuresis, scarcely sufficient importance is accorded to pharyngeal adenoids as a causative factor, we think, though in the treatment of incontinence of urine the author recommends their removal when present.

Section VII contains a very complete presentation of the diseases of the nervous system.

Section VIII discusses the diseases of the blood, lymph nodes, bones, etc. Under the heading lymphatism the author describes the well-known condition which he defines as "an exaggerated susceptibility of the lymphoid tissue, a constitutional condition in which any inflammation of the mucous membranes or skin sets up hyperplasia of the lymph nodes with which these parts are connected, which is out of proportion to the exciting cause and which tends to continue after it has ceased to operate." The condition is necessarily a vague one pathologically, and "strumous" and "scrofulous" do not describe it. "Tuberculous," too, is faulty to describe it, at least in many cases. The condition, however, is as certain in fact as it is uncertain in theory, and the brief discussion of "lymphatism" inserted by the author is a wise one.

The specific infectious diseases occupy Section IX. Their consideration requires little of criticism, for in them less than in other parts does the book depart from older models. Naturally this is so, and yet in many instances there are additions of new material derived from the author's wide clinical experience, and the new cases reported, even if applied to old theories and facts, lend an air of rejuvenation to the section. Naturally, diphtheria and its treatment receive exhaustive consideration.

Other General Diseases conclude the volume in Section X, and here are presented rheumatism and diabetes mellitus. An admirable general index is added.

In conclusion, we desire to express the satisfaction we have had in reading this book and our firm belief that all who read it will share that sentiment with us. It is a work of the greatest merit.

A *Treatise on the Surgery of the Alimentary Canal*, comprising the Œsophagus, the Stomach, the Small and Large Intestines, and the Rectum. By A. Ernest Maylard, M. B., B. S. Lond., Surgeon to the Victoria Infirmary, Glasgow, etc. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. xxiv–724. [Price, $7.50.]

In this work the author has given to the profession a complete and exhaustive treatise upon the surgical diseases of the œsophagus, stomach, and intestine.

Although most of the conditions described in the book have been ably considered in the many works on general and special surgery, they have not, to our knowledge, been grouped together in so complete a manner as in this volume.

The first part of the treatise, comprising 145 pages, is devoted to the surgical diseases of the œsophagus, and is, to our mind, the most praiseworthy part of the work. As many of these conditions are extremely rare, their consideration has been entirely omitted or but briefly alluded to in most other works upon surgery. The writer describes with great care and accuracy, in the majority of instances, the symptoms, clinical history, diagnosis, and treatment of the various injuries and diseases of this organ, which he frequently illustrates with well-chosen cases.

Although the chapter upon the impaction of foreign bodies in the œsophagus is one of the most important of the series, and the author's treatment of the subject is, in the main, above criticism, we are surprised to find that he fails to mention as a symptom the distressing salivation which so often forms a conspicuous feature of these cases.

The author next devotes 125 pages to the injuries and diseases of the stomach, with their treatment. In this part of the work, as well as in the 155 pages which follow on the injuries and diseases of the small intestine, the writer has given us a clear, readable, and moderately concise exposition of the subjects from the modern point of view.

Only 30 pages are given to the subject of appendicular inflammation, and, although it is perhaps not to be expected that English surgeons will hold the same well-grounded and crystallized opinions upon this important subject as those of our own countrymen, who have devoted so much more time and attention to its study, still, we can not but feel that, had he taken more pains to familiarize himself with the more recent writings of American surgeons, this most important subject would have been presented in a more satisfactory manner.

The book is well arranged, but bulky; it contains much valuable information, but, to our mind, would have been much more useful had it been condensed into half the space.

Abdominal Surgery. By J. Greig Smith, M. A., F. R. S. E., Professor of Surgery, University College, Bristol, etc. Fifth Edition. London: J. & A. Churchill, 1896. In Two Volumes. Vol. I. Pp. xiii–3 to 576. Vol. II. Pp. x–579 to 1171. [Price, $5 each volume.]

It is only necessary to say of the fifth edition of this valuable work on abdominal surgery, which is already better known to the profession than any other work of the kind in the English language, that it has been brought thoroughly up to date by the introduction of much new material and by a careful revision and rewriting of much of the original matter. And, although our duty ends here, it is our pleasure to briefly call special attention to the author's masterly treatment of the subjects of extra-uterine gestation, of intestinal obstruction, and of inflammation of the vermiform appendix.

No surgeon accustomed to deal with these conditions can fail to learn something from a careful reading of the views of this gifted and exceptionally experienced writer.

Mr. Smith, perhaps more than any other English surgeon, has accepted the American view in regard to the treatment of appendicular inflammation. While most of his countrymen advise delay, he states that "a death-rate through delay of something near twenty per cent. certainly demands urgent consideration as to whether any doubtful case should ever be left untreated. In America most surgeons are clear and outspoken in their belief that appendices should be removed even on suspicion. In England more caution holds; but it is doubtful whether true wisdom and real caution do not abide with the bolder policy."

Numerous other references to American surgeons are noted throughout the work which bear evidence of a genuine appreciation of the advances which have been made in this country in this department of surgery.

Lectures on Appendicitis and Notes on other Subjects. By Robert T. Morris, A. M., M. D., Fellow of the New York Academy of Medicine, American Association of Obstetricians and Gynæcologists, American Medical Association, etc. Second Edition, revised and enlarged. With Illustrations by Henry Macdonald, M. D. London and New York: G. P. Putnam's Sons, 1897. Pp. viii–173.

The views which Dr. Morris holds upon the subject of appendicular inflammation and its treatment are already well known to the profession; although they are regarded by many as extreme, it would be difficult, after a careful reading of his lectures on the subject, to point out the error of his logic.

It must at least be conceded that the author has given far more attention to the pathology, symptomatology, and treatment of this disease than the majority of his colleagues; and for that reason his views are certainly entitled to a judicious consideration.

The fact that a very large number of medical men agree with their patients in regarding an operation, in and of itself, as a calamity, to be avoided even at the risk of life, always stands in the way of the general acceptance of a line of reasoning which leads to the early employment of radical surgical measures in a given case, although such reasoning may be the logical outcome of undisputed facts.

While we are not prepared to indorse all the views set forth by Dr. Morris in his book, we feel that we can certainly recommend a careful perusal of it to all who are likely to be called upon to assume the responsibility in such cases.

Bibliographischer Semesterbericht der Erscheinungen auf dem Gebiete der Neurologie und Psychiatrie. Von Dr. med. et phil. G. Buschan. Zweiter Jahrgang. 1896. Erste Hälfte. Jena: Gustav Fischer, 1896. Pp. 156. [Preis, 4 Mark.]

There could be no better indication of the widespread interest taken in neurology than the semiannual appearance of a literary index devoted exclusively to neurological subjects. The system used by Buschan is by subject, and under each subject the names of the various authors and the title of the article referred to are given in alphabetical order. Some repetition by this method is unavoidable.

The present volume contains lists of the literary productions of the first six months of 1896, and seems unusually complete. The text contains many typographical errors.

BOOKS, ETC., RECEIVED.

Clinical Lectures on Mental Diseases. By T. S. Clouston, M. D. Edin., F. R. C. P. E., Physician-Superintendent of the Royal Edinburgh Asylum for the Insane, etc. Fourth Edition. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. xii–727. [Price, $4.75.]

Hypnotism and its Application to Practical Medicine. By Otto Georg Wetterstrand, M. D., Member of the Society of Swedish Physicians at Stockholm, etc. Authorized Translation from the German Edition by Henrik G. Petersen, M. D., Member of the Société d'hypnologie et de psychologie, Paris, etc. Together with Medical Letters on Hypno-suggestion, etc., by Henrik G. Petersen, M. D. London and New York: G. P. Putnam's Sons, 1897. Pp. xvii–166.

Inebriety; its Source, Prevention, and Cure. By Charles Follen Palmer. New York, Chicago, and Toronto: Fleming H. Revell Company, 1897. Pp. 109. [Price, 50 cents.]

Organ Diseases of Women, Notably Enlargements and Displacements of the Uterus, and Sterility, considered as Curable by Medicines. By J. Compton Burnett, M. D. Philadelphia: Boericke & Tafel, 1897. Pp. vii–156. [Price, $1.]

The Menopause and its Disorders. With Chapters on Menstruation. By A. D. Leith Napier, M. D., F. R. C. S. Ed., M. R. C. P. Lond., F. R. S. Ed., Senior Surgeon, and Surgeon in Charge of Gynæcological Cases, etc. London: The Scientific Press, Limited, 1897. Pp. xv–298. [Price, 7*s.* 6*d.*]

A Manual of the Practice of Medicine, prepared especially for Students. By A. A. Stevens, A. M., M. D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Fourth Edition, revised and enlarged. Illustrated. Philadelphia: W. B. Saunders, 1896. Pp. xviii–17 to 511. [Price, $2.50.]

The Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. 1897. Fifteenth Year. London: Simpkin, Marshall, Hamilton, Kent, & Co., Limited. Edinburgh: Young J. Pentland. New York: E. B. Treat. Pp. lxxv–851. [Price, $2.75.]

Maps accompanying the Sixteenth Annual Report of the State Board of Health of New York.

Sixteenth Annual Report of the State Board of Health of New York. Transmitted to the Legislature February 17, 1896.

Thirty-first Annual Report of the St. Francis Hospital, New York. For the Year ending December 31, 1896.

Ueber die Lochkerne des Fettgewebes. Von Dr. P. G. Unna. [Sonder-Abdruck aus *Deutsche Medizinal-Zeitung*.]

Diphtheria and Antitoxine. By Nestor Tirard, M. D. Lond., Professor of Materia Medica and Therapeutics at King's College and Physician to King's College Hospital, etc. London, New York, and Bombay: Longmans, Green, & Co., 1897. Pp. vi–141. [Price, $2.50.]

Elementary Bandaging and Surgical Dressing, with Directions concerning the Immediate Treatment of Cases of Emergency. For the Use of Dressers and Nurses. By Walter Pye, F. R. C. S., Late Surgeon to St. Mary's Hospital. Revised and in part rewritten by G. Bellingham Smith, F. R. C. S., Surgical Registrar, Guy's Hospital. Seventh Edition. Philadelphia: W. B. Saunders, 1897. Pp. viii–218. [Price, 75 cents.]

Injuries and Diseases of the Ear. Being Reprints of Papers on Otology. By Macleod Yearsley, F. R. C. S., Fellow of the British Laryngological, Rhinological, and Otological Association, etc. London: The Rebman Publishing Co., Ltd., 1897. Pp. 40. [Price, 2*s*.]

A Report of a Case of Gastrostomy. By Martin F. Coomes, M. D., Louisville, Ky. [Reprinted from the *American Practitioner and News*.]

Congenital Ptosis—The Operation devised by Panas for Relief Modified. By Martin F. Coomes, M. D. [Reprinted from the *American Practitioner and News*.]

Cyclone Neuroses. By C. H. Hughes, M. D., St. Louis. [Reprinted from the *Alienist and Neurologist*.]

Imperative Conceptions. By C. H. Hughes, M. D. [Reprinted from the *Alienist and Neurologist*.]

Hay Fever; the Best Treatment for Stay-at-homes. By William Cheatham, M. D., Louisville, Ky. [Reprinted from the *Laryngoscope*.]

Notes on Stone in the Bladder. By D. F. Keegan, F. R. C. S. Eng., etc. [Reprinted from the *Lancet*.]

The Ætiology of Appendicitis. Why is it more Common in the Anglo-Saxon Race? By James S. Chenoweth, M. D., Louisvills, Ky. [Reprinted from *Mathews's Quarterly Journal*.]

An Unusual Case of Appendicitis. By Howard Paxton Collings, M. D., Hot Springs, Ark. [Reprinted from the *Hot Springs Medical Journal*.]

A Report of a Case of Reinfection of Syphilis. By Howard Paxton Collings, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases*.]

Miscellany.

The Abuse of Medical Charity.—In the *Medical and Surgical Reporter* for March 13th there is published a very interesting article entitled The Hospital, the Doctor, and the Community, by Dr. Edward Jackson, of the Philadelphia Polyclinic. Dr. Jackson calls attention to some aspects of the subject that are not often spoken of. For example, he said:

The influences favoring the rapid increase of hospital services that we can most profitably discuss here [at a meeting of the Philadelphia County Medical Society held on February 10th] are those exerted by members of the medical profession. One such influence, exerted by the ambition of the hospital physicians and surgeons for large clinics, has been so largely dwelt upon in most of the discussions of the subject that it need only be mentioned here. Another side quite as worthy of attention has not been so often spoken of. This is a tendency sometimes shown on the part of the family practitioner to regard his patients as his particular source of private income, while he is at the same time perfectly willing to assist them in any effort to get the benefit of free treatment from other members of the medical profession. At the Philadelphia Polyclinic it has been a common experience to find a patient in a special clinic needing treatment also in the department of general medicine; and, after referring the patient to that department, to receive an angry letter from some general practitioner who feels very badly treated because one of his good patients, who always paid a moderate or fair fee, and whom he himself sent to the special clinic, has been referred for general treatment to somebody else instead of being sent back to him. In other words, there are medical practitioners—and apparently a good many of them—who regard it as perfectly legitimate to send their patients to a free clinic for advice regarding any particular ailment that they do not themselves undertake to treat. That such infidelity to common honesty and common professional interests sometimes overreaches itself, and always tends to the loss of private patients in the public clinic, is obvious. Perhaps it is not generally appreciated what an influence such an attitude on the part of many doctors exerts in determining the way that treatment at public clinics is regarded by the community. Sometimes the instances of this seem very aggravated, as when recently a very well-to-do saloon-keeper from a neighboring city came to a hospital, instructed by his physician to get as definite advice as possible and bring it, with all prescriptions, to the physician, who would then carry out the treatment, and be paid by the saloon-keeper for his services. In another case, the patient frankly stated that he was going to pay for his treatment at the hospital. When told that no charge was made for treatment there and that pay patients could not be treated, he said that he understood that; that he did not mean to pay the hospital, but that he was going to pay the physician who referred him to the public clinic for each visit he made there. If this is the attitude of supposed members of the medical profession, what can we expect from laymen who are not above the average of intelligence and thoughtful discrimination?

While we may be able to render important service in the way of diminishing the rapidity of the movement from private to hospital practice, all we can do in this direction will be far from solving the problem presented in the rapid growth of hospitals. If, as I believe, and as even those believe who see in it nothing but evil, this growth is destined to continue, it is evident that the medical profession must find some new relation to hospital administration, and that hospital administration is too important a matter to be left entirely to the control of those who, having little else to do, find in it a means of combating *ennui* and an easy method of securing the self-satisfaction and respect that go with a supposed public service.

To render discussion definite and practical the following points are suggested:

That all hospitals, or other public charities receiving

State aid, even to the extent of exemption from taxation, should be directly accountable to the State, and be controlled by definite legislative enactments, or better, by direct representation of the government in their boards of management.

That among the managers of every hospital there should be a certain proportion of members of the medical profession—not to represent their own or any other private interests, but as representatives of the profession, and directly chosen by it.

That the management of hospitals should be so changed as to effect a wider distribution in the profession of the opportunities of hospital chiefs, by limiting terms of service and breaking up the practice of giving many such positions to one physician or surgeon, whose assistants do the work that magnifies his reputation, while they grow gray in subordinate positions.

That medical men should consider, discuss, and carry forward such plans of organization as promise the same benefits as public hospital and dispensary services, yet avoid the extension of pauperism and the deficient compensation of the physicians who do the work.

That, in the organization of the Pay Hospital for Contagious Diseases in which this society is now interested, its direct permanent participation in the choice of the management, and the opportunity for every one of its members to treat therein his patients, should be insisted on.

In the discussion of the subject which followed the reading of Dr. Jackson's paper, Dr. George M. Gould said that Dr. Jackson seemed to have made a great mistake in not distinguishing between the in-patient and the dispensary patient; it was the dispensary patient that caused the trouble. The hospital abuse would rectify itself as regarded the in-patient by the inability of the State and the hospital to support these patients in great numbers and for a lengthy period; by the simple natural process of atrophy it would wither. But the dispensary abuse, the out-patient department—that was the crying evil. There is no question that nine tenths of the patients treated should have been the patients of the young, growing, and needy men, and one might well say to the young medical man, "Go into competition with the hospital doctors! Tell your patients that they can not get the best medical treatment in the hospital." Often the best medical treatment could not be given, at least was not given, in dispensaries.

Dr. M. V. Ball said that the whole matter seemed to be one of economic evolution. The individual shoemaker had been wiped out by the shoe factory, and it seemed only a question of time when the individual doctor would be wiped out by the hospital institution. This was, of course, an undesirable result, but it seemed to be inevitable. In cities there were to-day many diseases seldom treated by physicians; the surgeon seldom saw an amputation outside of the hospital; contagious diseases were largely treated in hospitals; even typhoid fever was better treated in a hospital. In course of time all such cases would be treated in hospitals. The fact illustrated the trend of affairs; it was the same as the department store wiping out individual stores.

Dr. John B. Roberts said that some institutions, because they were teaching institutions, preferred to have all patients come. The patients underwent in exchange for free treatment the personal discomfort that came from being discussed and exhibited to students. Dr. Roberts dissented from the view expressed that treatment in hospitals was inferior to that received in private practice. Patients at hospitals did often, perhaps usually, get better treatment than they would obtain from some graduates of medical schools. For many years, in Philadelphia and elsewhere, colleges had graduated students who were not competent, and patients soon found that they could be better treated by going to hospitals than by going to some private practitioners who would take from them a moderate fee. They had been compelled in order to be cured (particularly at a time when most physicians were often ignorant of the specialties of medicine) to go to men with hospital experience. They could not go to a man with a high reputation except in a hospital. Why? Because he put his fees at such a point that they were prohibitory. This was one agency that had driven many patients in moderate circumstances to the hospitals. They desired to save their health and grasped at the opportunity presented. It was a choice between a doctor who would ask a very high fee, who, however, had a great deal of experience and knowledge, and a doctor who would ask a small fee but do them little good because of his imperfect knowledge.

The profession itself was largely to blame for this condition of affairs: First, for its ignorance; second, for its cupidity. Dr. Jackson was probably right when he said the medical profession must control this thing themselves; it must not expect legislatures to control it or the public to control it. The doctor must first become competent; second, he must treat patients for a moderate fee, if necessary, or without pay.

The establishment of small hospitals in the smaller cities and towns had been of great benefit to the public and had added materially to the average ability of the medical profession. Formerly, no physician had been able to get even a moderate experience in surgery or the specialties unless he lived for some time in a large city. Hence, dwellers in the small towns and rural districts had, as a rule, to travel long distances and expend much money to obtain good surgical or special professional service. The poor in these districts were almost shut off from this service, unless they had friends willing to send them to the cities. Now the local doctor had the benefit of a hospital, with nurses and appliances, to put into practice the teaching he had received or the skill and methods he had developed, and, as a rule, the poor of the country received better and earlier treatment. The well-to-do of the same regions had the advantage of doctors of wider experience, and the average ability of the whole medical profession was increased. These semirural or rural hospitals did good work for the profession and humanity, though they did reduce the income of the metropolitan doctors by lessening the number of consultations.

Dr. Thomas S. K. Morton said that, so far as he could see, the future of medicine would develop great incorporated hospital companies. These would be organized as pure business ventures, would erect splendid buildings, equip them perfectly, pay large salaries to the very best medical men that could be secured to conduct the scientific portion of the work, and would use the ordinary mercantile methods of securing business. Already such enterprises had made their appearance and had proved exceedingly profitable to their owners in certain portions of the West, and there was every reason why they should be successful when so conducted. They did not operate, however, to the best interests of the profession at large, but unless the profession could unite in the strictest kind of trades-unionism, escape from being rendered poverty-stricken, as a class, within the next generation seemed impossible if present conditions continued.

If, on the other hand, the profession could apply a method by which the speculative and monopolistic value of natural opportunities and public franchises could be taxed back into the public treasuries, thus rendering accessible work for all and securing to the worker the full product of his untrammeled industry, all should be able to adequately recompense the physician for his services. Or, should great public hospitals assume the care of the greater portion of the population, the surplus physicians would find in these freer opportunities a means of livelihood to which they could turn rather than to barbarous competition with their brothers in the profession.

Dr. Jackson said, in reference to the competition of the young private physician with the hospital, it ought to be borne in mind when this was proposed as a remedy that it was a very one-sided competition. The Pennsylvania Hospital had a reputation of a hundred and fifty years and was spoken of every day in newspapers and remembered by thousands, but the young doctor might grow old and be forgotten long before he could be known by even the inhabitants of his ward or a small district in it. If hope must be based chiefly on free competition of private individuals with great public institutions, it could be very well seen that there was ground for pessimism. Unless the medical profession could do something for itself, capitalists would step in and employ it, or employ any member of it they chose. Unless medical men could organize and work together they would be worked separately. There was one point of too much practical importance to be forgotton—namely, with reference to the organization of a hospital for contagious disease now pending. The County Medical Society should try to carry out its ideas in the organization of this institution. While no more additional hospitals were wanted, the society was committed to this one, and so should join in its organization to see that it should be upon better lines than had been followed in organizing other hospitals.

The Action of Ergot on Pregnant Women.—In a long article on this subject in the *British Medical Journal* for March 6th, Dr. Lombe Atthill refers to a number of cases in which he prescribed ergot combined with strychnine for patients in whom he feared post-partum hæmorrhage. It was given some days before labor set in.

It has been, he says, his invariable rule to employ this treatment in all cases in which there was reason to fear the occurrence of hæmorrhage, and the results have been most satisfactory. He states that he has never had occasion to regret its employment, and has never observed any injurious effects on either mother or child, although the ergot was taken regularly for five or six weeks before labor set in. These cases, he thinks, are sufficient to prove to his satisfaction, at least, that ergot, alone or in combination with strychnine, may be taken with absolute safety to both mother and child by pregnant women, in the usual doses, and for a considerable time. When it is taken continuously for not less than three weeks prior to labor, it tends to delay the setting in of uterine action, and does not bring on labor in a case in which uterine action has not already been excited. Its administration for some weeks prior to the beginning of labor arrests the tendency to post-partum hæmorrhage, and facilitates the involution of the uterus.

Dr. Atthill mentions also some cases of threatened abortion in which he used ergot, and states that he now invariably administers it to women threatened with abortion. In summing up the whole subject as to the action of ergot combined with strychnine, he gives the following conclusions as the result of his experience:

1. When administered previous to the termination of pregnancy in the case of women in whom a tendency to post-partum hæmorrhage is known to exist, it tends in a marked manner to prevent the occurrence of hæmorrhage.

2. When so administered in ordinary doses, it does not produce any injurious effect on either mother or child, and it seems to delay the beginning of labor in such cases.

3. It tends to make the involution of the uterus more perfect, and lessens the chance of the occurrence of subsequent uterine troubles, many of which depend for their cause on imperfect involution of that organ.

4. It will not bring on premature labor or induce abortion unless uterine action has previously been set going.

5. In cases of threatened abortion its administration frequently seems to act as a uterine tonic, and in some cases tends to avert the danger of a miscarriage, provided the ovum is not blighted.

6. If the ovum is blighted, and especially if it is detached, ergot usually hastens its expulsion.

Atriplicism.—In the *Nouveaux remèdes* for February 24th there is an article in which the writer calls attention to an affection called atriplicism, a form of intoxication supposed to be caused by the ingestion of the atriplex, or mountain spinach. Under this name M. Matignon, physician to the French Legation at Pekin, describes symptoms which he has often had occasion to observe in the Chinese of the poorest classes, particularly beggars, and especially the women. These symptoms appear after the ingestion of young shoots of a certain variety of atriplex, and are characterized, without general symptoms, by a diffuse œdema of the face, the hands, and the forearms, by troubles of motility, of sensibility, and of circulation, and by cutaneous trophic disturbances, often complicated by more or less extensive eschars near the œdematous region.

M. Laveran has called attention to the fact that, if these symptoms are attributed to the ingestion of the young shoots of a variety of atriplex, there is but a small number of sufferers among those who eat the plant. The Chinese physicians think it is an intoxication produced by a poison secreted by the little greenish-yellow spiders which are often found on atriplex. M. Matignon accepts this opinion, and it seems to be confirmed by the fact that the symptoms do not manifest themselves when the shoots of the plant are carefully washed, or when they are cooked before they are eaten.

Other hypotheses are admissible, continues the writer. It is possible, for example, that it is a question of local symptoms produced directly by the spiders. M. Laveran was struck by the fact, while reading M. Matignon's work, that the parts of the body ordinarily not covered were alone attacked, that the right hand was more frequently attacked than the left hand, and that the eruption was sometimes limited to the thumb and first finger of the right hand, the parts most exposed while gathering the plant. The fingers soiled by an irritating substance may easily infect the face, or the spiders may spread on the face as they do on the hands and forearms. There are no gastric symptoms; and the appetite is good during the entire course of the disease, which fact is not favorable to the theory that the poisoning in these cases is due to the ingestion of a toxic substance.

The question is one which should be considered from an ætiological point of view, and the results of complementary investigations ascertained before a name is given to the disease. It is evident, the writer thinks, that the term atriplicism is misapplied, since it is not the atriplex which is the cause of the symptoms.

Boat-shaped Thorax in Myelosyringosis.—At a recent meeting of the Société médicale des hôpitaux, a report of which appears in the *Journal des praticiens* for February 27th, M. Marie and M. Astié called attention to a very peculiar thoracic deformity which they had observed several times, which seemed characteristic of myelosyringosis, for they had never seen it in any other affection. This deformity was characterized by a depression which was to some degree formed in the upper and median part of the anterior thoracic wall; it was completed by the forward projection of the shoulders and by the obliquity of the anterior thoracic wall, which seemed to approach more and more to the spine in proportion from below upward toward the cervical region.

This depression extended from the sternal fourchette as far as the level of a horizontal line coincident with the inferior border of the pectoral muscles; it never went beyond this line below. Transversely, it was limited by the prominence of the shoulders. The long axis was directed from above downward, so that it might be considered as two abrupt lateral borders. These were the sides of the boat, one the upper, or cervical, extremity, or the prow, and the other the lower, or abdominal, extremity, or the stern, which gradually sloped upward. The bottom of the depression was flat and slightly irregular, so that the maximum of the depth was sometimes on the left and sometimes on the right of the median line; more frequently it was several centimetres below the sternal fourchette. The greatest depth observed by the authors was five centimetres and a half.

Since it was due to a bony deformity, this appearance of the thorax should not be attributed to the disposition of the pectoral muscles; it was not, either, a natural appearance consequent upon the projection of the shoulders. In fact, there had been very little atrophy of the pectoral muscles in the patients observed by M. Marie and M. Astié, and in those affected with myopathy, in whom the pectoral muscles had completely disappeared, the aspect of the thorax did not in any way resemble that of the boat-shaped form. It was unnecessary to add, the authors said, that scoliosis also, which existed in their patients, was not the cause; the thoracic costal deformities following scoliosis were entirely different from this one, which was not found in any form of scoliosis.

It was evidently a trophic lesion like other bony lesions of myelosyringosis, and one that occurred frequently, for the authors had observed it four times in ten cases of this disease, and they concluded, therefore, that a boat-shaped thorax might be an effectual aid in the diagnosis.

The American Climatological Association.—The fourteenth annual meeting will be held in Washington on May 4th, 5th, and 6th, under the presidency of Dr. E. Fletcher Ingals, of Chicago. Besides the president's address, the following papers are included in the preliminary programme: The Choice of a Summer Residence, by Dr. F. I. Knight, of Boston; Mountain Fever, by Dr. Thomas Darlington, Jr., of New York; Renal Disease as Affected by Climate, by Dr. I. N. Danforth, of Chicago; Climate or Environment as a Factor in the Repair of Neurasthenia and Melancholia, by Dr. J. Madison Taylor, of Philadelphia; Nervous Diseases Affected by Climate, by Dr. Sanger Brown, of Chicago; The Comparative Merits of Resorts in Colorado, New Mexico, and Arizona, by Dr. S. E. Solly, of Colorado Springs; A Brief Consideration of Some Points in the Management of Consumption, by Dr. R. H. Babcock, of Chicago; Cases of Pulmonary Tuberculosis with Recovery, by Dr. John H. Musser, of Philadelphia; The Clinical Value of the Culture Products of the *Bacillus tuberculosis* in Tuberculous Affections, by Dr. Karl von Ruck, of Asheville, North Carolina; Terebinthinates as Remedial Agents, by Dr. J. B. Walker, of Philadelphia; Aerotherapeutics and Hydrotherapeutics in the Prevention and Treatment of Pulmonary Tuberculosis, by Dr. S. A. Knopf, of New York; The Infrequency of Pneumonia on the Atlantic Coast of Florida, by Dr. Frank Fremont Smith, of St. Augustine, Florida; Remarks on the Treatment of Tuberculosis by the Antituberclc Serum, by Dr. Guy Hinsdale, of Philadelphia; Some Personal Observations on the Effects of Changes of Climate upon the Health of Men and Animals, by Dr. R. C. Newton, of Montclair, New Jersey; The Dangers of Tuberculous Infection and their Partial Arrest by Climatic Influences, by Dr. C. F. Gardiner, of Colorado Springs; Does the Institution Treatment Promise the More Certain Cure in Pulmonary Tuberculosis? by Dr. C. P. Ambler, of Asheville, North Carolina; The Treatment of Gout by Natural Mineral Waters, by Dr. C. C. Ransom, of New York; A Report on Mineral Springs, by Dr. A. C. Peale; and The Treatment of Hæmoptysis with the Salicylates, by Dr. Thomas J. Mays, of Philadelphia.

Other papers will be presented by Dr. R. G. Curtin, of Philadelphia, Dr. Thomas D. Coleman, of Augusta, Georgia, Dr. C. F. McGahan, of Aiken, South Carolina, Dr. H. L. Elsner, of Syracuse, N. Y., and others.

The Offense of Substitution in Dispensing.—The firm of Fairchild Brothers and Foster is performing a public service by resorting to legal measures to stop the substitution of imitations for their preparations called for in prescriptions. It appears from the *Jersey City News* for March 8th that the firm has taken action in the Court of Chancery of New Jersey against a Newark apothecary for fradulently dispensing some preparation not Fairchild's, when Fairchild's essence of pepsin was specified. These preparations so dispensed and sold as and for Fairchild's essence of pepsin, they maintain, differ materially in chemical composition and physical properties from Fairchild's essence, and also contain salicylic acid. The motion for an injunction was granted in the case of the Newark apothecary without any defense on his part. The action taken by the firm against substitution has, we think, the cordial indorsement of the entire medical profession, and we have reason to believe it is equally satisfactory to all honest apothecaries. The best of them deplore this evil, and would welcome any general and decisive effort to rid the trade of it, for they realize that the practice is one which is prejudicial to the best interests of the drug trade in every way; furthermore, the honest druggist naturally recognizes in this practice an illegitimate and fraudulent competition.

Two Chinese Medical Women.—The December number of the *China Medical Missionary Journal* opens with an account of Dr. Ida Kahn and Dr. Mary Stone, accompanied by the portraits of those attractive young women. The account is as follows:

"While an increase in the number of medical missionaries at work in China is *always* a cause of encouragement to those already in this field, there are reasons why the arrival among us of Dr. Mary Stone and Dr. Ida Kahn excites especial interest.

"Ever since the departure of these Chinese girls for the United States, over four years ago, their career in that country has been watched with great interest by many in China, as well as by a host of the interested and curious in America.

"When, with many American students, they took the examinations that are required of all who enter the medical department of the University of Michigan, it was a great surprise to the authorities of the university to find that the papers of these little foreigners were among the best that were presented. They had been nearly all their lives under the immediate personal care of Miss Gertrude Howe and, for some years before they went to America, were being educated with that end in view.

"While in the United States they did not wear Chinese clothing, but by keeping house for themselves they were better able to retain their native characteristics than they would otherwise have been. They were loved and respected by their fellow students for their sterling Christian qualities, while their conscientious work and high grade of scholarship brought them into favor with all of their instructors.

"The fact that two Chinese girls were making a fine record in a medical college of high grade caused them to become widely known through the press and, in varied phrases, the wonder was constantly expressed, '*Can any good thing come out of China?*'

"They graduated in their native dress and when, in the procession of over four hundred graduates, fifty-eight of whom were medics, these Chinese girls crossed the platform to receive the diplomas which testify that they have earned the degree of M. D., the great audience in University Hall showed their appreciation by a burst of applause.

"President Angell said to the friends of these girls, 'Their future career will be watched with every expectation of their eminent success.'

"They spent the summer after their graduation in further research and experience in Chicago.

"Although the appreciation of their student efforts was gratifying to their friends and patrons there was still considerable anxiety as to their reception by the Chinese on their return to Kiukiang. When it was known that they might soon be expected their Chinese friends laid plans for receiving them with honor. The missionaries had at first some doubts as to the wisdom of allowing a public ovation to two young ladies, but their native friends pressed the point and gained the day. As soon as they were seen to be leaving the steamer the firecrackers were heard and, except during the ride through the narrow city streets, there was no cessation until they were within the doors of their old school home.

"The long-continued firing attracted the natives, of course, and by the time the newly arrived doctors reached the Bund there was a large crowd that constantly increased. Word went from one to another, until all around the natives were crowding and pushing to get a glimpse of the 'women doctors.' Some in the crowd were heard to say, 'Why, these girls are receiving more honor than was shown to our commandant when he arrived!'

"As the company made their way slowly along the Bund through the crowd, the Chinese pressed up close to the chairs of the missionaries and asked over and over again, 'Are they Chinese women?' 'Is it true they have been studying for four years in a foreign land?' 'In what country were they?' 'Can they heal the sick?' And then there was vigorous nodding of heads, and 'Hao! Hao! Hao!' was heard on all sides, 'Will they live in Kiukiang?' was asked, and the affirmative reply pleased them. It seemed at the time remarkable that in so dense a crowd the universal expression of face and voice indicated only favorable interest.

"It had been the plan of the girls and their friends that they should rest and visit for a short time after returning, and then, as they could gain the confidence of the people, gradually feel their way into work. It had seemed so certain that this would be the only way in which to proceed that no provision was made for the immediate opening of work.

"But lo! on the third day after their arrival four patients presented themselves and asked for treatment. On the following day the same four returned and six new ones came; and so it has gone on day after day until now a dispensary is in hasty preparation, so that they may work to greater advantage. The largest number of patients in any one day has been twenty, yet it was only on the 5th of October that they reached home.

"When they had been back for about a month they were one evening sent for to attend a woman in confinement. She had twins, but as soon as one child was born all action ceased and the Chinese were at a loss to know what to do. On arriving at the house the young ladies found there the native doctor of highest repute in the city. He was richly clad in satin and silk and had four chair bearers, but he told the people he could do nothing for the woman. He received the girls pleasantly and, after a little, took his departure, advising the family to put the patient into the hands of the lady doctors. He said, 'They have crossed mountains and seas to study about these matters.'

"The people asked the doctors to guarantee that the woman would live. Of course they promptly refused to do this and after some parleying turned to go. Then the aged members of the family fell on their knees and begged them to stay and told them to do what they thought best. The second child was safely delivered and with its mother continued to do well, but the first child died.

"Three days later Dr. Stone and Dr. Kahn were invited by this grateful family to a feast, after which they were wound about with red scarfs by the old grandmother, and the whole family escorted them home with gifts amid the firing of many crackers.

"They have not, up to the present time, had to endure the pain of losing a patient, although they have had several very serious cases. When that does occur, as of course it must, there will doubtless be some reaction and present faith may be changed to distrust for a time. But the most hopeful had not dreamed of their commencing work without some opposition, and that they were actually sought, before making any effort to secure patients, has been a great surprise to all.

"This early success is doubtless due largely to the fact that they are back among their own people as *true Chinese*, and, while they have gained much in culture and intellect, love and sympathy for their race have been ever present, while the ruling motive in all their efforts has been how to best prepare themselves to help their countrywomen. The native women do not stand at a distance to admire them, but familiarly take their hands and feel their clothing and, while acknowledging their superiority, do not hesitate to invite them as guests to their humble homes.

"Dr. Stone was the first girl in Kiukiang whose parents allowed her to go always with unbound feet. Her father is a preacher in the Methodist Episcopal Church; before her birth her parents said that if God gave them a little girl they would never bind her feet.

"Dr. Kahn, when a few weeks old, was given by her parents to Miss Howe, by whom she was adopted.

"In a few months a woman's hospital will be erected in Kiukiang to be in charge of Dr. Kahn and Dr. Stone. They live in native style, in the home that has been provided for them and over which Miss Howe presides.

"It will be of interest to all Christian workers to know that these girls have voluntarily pledged themselves to *give* their services for four years to the society to whom they are indebted for their education. The help of personal friends enables them to do this."

Hæmaturic Bilious Fever.—The *Presse médicale* for February 27th contains the following account of a case which came under M. Antony's observation (*Journal de médecine de Bordeaux*): The patient, a man twenty-three years old, lived in the Soudan for several months, and during that time he had slight attacks of malarial fever. After his return to France a very violent attack of the fever occurred; he passed blood, and complained of very sharp pains in the kidneys. The temperature was 104.5° F. Four days later the man was emaciated, and the face and the sclerotics were yellow; the pulse was frequent and small, and the temperature was 104.2°. There was continual bilious vomiting, and the stools were numerous and of a bilious nature. The urine was red. In the splenic and hepatic regions palpation gave rise to sharp pain. The liver was increased in size, and exceeded the borders of the floating ribs by the breadth of two fingers. The spleen was large and its dullness extended over an area of sixteen centimetres.

Two subcutaneous injections of quinine hydrochloride (eighteen grains) and ergotine (six grains) were administered successively, and a potion containing sixty grains of chloroform was given. Cracked ice was also given, but the vomiting persisted. The evening temperature was 104°, and the urine continued to be red.

During the night the fever disappeared, but on the following morning the patient was in a state of coma; the pulse was imperceptible at the wrist, and the respirations were 36 a minute. Toward evening the vomiting was arrested, and injections of ether, caffeine, and artificial serum were practised, but without avail, for the patient died about three hours afterward.

At the autopsy the following facts were ascertained: The liver weighed sixty ounces, and its capsule was not adherent to the hepatic tissue. The parenchyma presented a bronze color which did not disappear on pressure; there was no hæmorrhagic spot. The gall bladder and bile ducts did not present any peculiarities. The pancreas was healthy. The spleen weighed twenty ounces; it was elongated and measured twenty-four centimetres in length and fifteen in width. The capsule was thick and the parenchyma was black and soft. There was no hæmorrhage or infarction.

Each kidney weighed four ounces and a half. The capsules did not present any adhesion and were not thick. On section, the tissue was felt to be of a normal consistence; it was of a pale rose color. The pyramidal and the cortical substances were of the same tint. There was no hæmorrhage, no infarction, and no bloody exudation.

The histological examination revealed the following facts: The capillaries of the glomeruli were empty and retracted; there was no hæmorrhage in the cortical and medullary substances; several grains of pigment were seen on a few of the glomeruli. On the whole, the renal alterations were insignificant.

The author attributes the hæmaturia to the hæmoglobinæmia provoked by the malarial parasite. He recommends giving strong doses of quinine as soon as possible in such cases, and he does not believe in the efficacy of hæmostatics.

A Society for Advancing the Practice of Medicine.—The New York Medical Society for Advancing the Practice of Medicine has recently issued a circular giving the following names as those of the members of its executive board: Maurice J. Burstein, M. D., president, 179 Henry Street; Julius Sachs, M. D., first vice-president; Sam D. Douglas, M. D., second vice-president; Leon Cherurg, M. D., treasurer, 52 Eldridge Street; Sigmund A. Tarler, M. D., financial secretary; R. Hochlerner, M. D., recording secretary, 205 Henry Street; also the following names of members of the advisory board: Max Landesmann, M. D., chairman; Michael Lewinski, M. D.; Robert Kunitzer, M. D.; Nicholas Sachs, M. D. The circular then gives certain resolutions adopted at the meeting of February 17, 1897. They are as follows:

"*Whereas*, for several years last past certain physicians have so conducted themselves in the practice of medicine in the city of New York as to produce evils which tend greatly to lower the standard and dignity of our profession and bring the same into disrepute, and

"*Whereas*, gross abuses exist and imposition is practised upon the public charities and institutions, commonly known as 'dispensaries' (aided and abetted by such physicians), by certain people who apply for treatment in such institutions and who receive the same to the injury and detriment of the deserving and worthy poor, and by such acts also depriving the regular practising physicians of the benefit of patients well able to compensate for the professional services rendered, and which action on the part of such physicians is degrading and an injury to the profession, and

"*Whereas*, numerous so-called dispensaries have been organized and are conducted by such members of the medical profession for their private gain, in utter disregard of all proper care and precaution for prevention of contagion; some being located in drug stores where the public freely enter and in tenement houses which are largely inhabited and in many instances overcrowded, thereby causing great danger to the people,

"*Therefore Resolved*, that the New York Medical Society for Advancing the Practice of Medicine and all the respectable members of the New York medical fraternity severely condemn the practices and acts so complained of, and we call upon all such members who are in sympathy with our movement and have at heart the best interest of our noble profession and of each individual member to render such support, moral and financial, in the adoption of such measures as will tend to eradicate and prevent these evils, abuses, and practices.

"*Resolved further*, that the grievances be submitted to the members of the legislature, with the request to pass such law as may be proper for the prevention of such evils, abuses, and practices; and

"*Resolved further*, that the executive committee and advisory board of this society be and they are authorized to cause a bill to be prepared covering the purposes aforesaid, and cause the same to be introduced in the legislature of this State at its present session."

The following indorsement is appended:

"New York, *March, 1897.*

"We the undersigned indorse the work of the New York Medical Society for Advancing the Practice of Medicine and request the medical fraternity to assist the said society morally as well as financially.

"[Signed.] A. Jacobi, M. D., 110 West 34th Street;
"A. M. Phelps, M. D., 62 East 34th Street;
"Paul F. Munde, M. D., 20 West 45th Street;
"C. A. von Ramdohr, M. D., 45 Irving Place;
"Thomas H. Manley, M. D., 115 West 49th Street;
"Graeme M. Hammond, M. D., 58 West 45th Street;
"W. H. Katzenbach, M. D., 22 West 45th Street;
"Edward G. Janeway, M. D., 36 West 40th Street;
"Robert F. Weir, M. D., 37 West 33d Street."

The Toxicity of Mushrooms.—The *Progrès médical* for February 27th contains an interesting article on this subject in which the author, M. Pouchet, deals with the question from a point of view different from that usually taken. If, he says, he was asked to define mushrooms he would call them large bacteria or, better, colonies of bacteria. Like bacteria, in fact, they constitute powerful agents of transformation of the organic matter in decomposition, and considerably hasten the return of organic substances to simple combinations which are susceptible of being made use of eventually by the plants, and of being thus brought back in the *circulus vitæ*.

Mushrooms transform residues unacceptable to the digestive tube of man into nutritive and savory substances; it may be easily seen also that by reason of the amounts of nitrogen and carbon contained in the tissue of the mushroom it is scarcely inferior in anything to butcher's meat. Mushrooms contain from ninety to ninety-two per cent. of water, and the dry substance contains seven and a half per cent. of nitrogen and fifty per cent. of carbon. The proportion of nitrogen is certainly inferior to that contained in meat, but it must not be forgotten that this nitrogen is an albuminoid substance which is extremely assimilable.

Mushrooms are general stimulants of the organism; the truffle, for example, is a cordial, a strengthener, and an aphrodisiac.

With regard to the characteristics of the non-poisonous or poisonous mushrooms, popular credulity and foolish prejudices have attributed many to them. The non-poisonous species do not blacken silver or other metals with which they come in contact; the poisonous, on the contrary, act very differently; they are also supposed to possess the power of turning onion juice black and of curdling milk. They are said to grow in the shade of a thick wood, and to be shunned by animals. M. Pouchet thinks it is time to do justice to all these prejudices, but at present he limits himself to the statement that there is no foundation for the supposition that animals avoid the toxic species of mushrooms, for the most dangerous kinds, such as the *Amanita bulbosa*, are eaten by slugs and the lower insects.

The toxicity of certain species is variable, and it may depend upon the nature of the soil, which probably has an influence over the elaboration of the products formed by the vital activity of the vegetable during the course of its existence, just as the nature of the culture medium of bacteria influences their virulence.

M. Pouchet thinks that, in order to explain the toxic action of mushrooms, we must take into account the presence of these products in their tissue, which are wrongly known as toxines. Just as there are bacteria which have never become virulent, so there will be found mushrooms that are always edible.

M. Pouchet states that there are abundant proofs of the presence of toxines in mushrooms. In the Vosges the *Agaricus muscarius*, macerated in vinegar and water, then boiled in the same liquid, is never toxic. In the same way, a liquid containing bacteria may become inoffensive when heated with vinegar.

If the juice of the *Amanita muscaria* is deprived by coagulation of its albuminoid substances, it is no longer toxic; if it is evaporated at a low temperature, it gives, on the contrary, an extract endowed with the properties of the entire juice. Are not these facts, asks M. Pouchet, of the same order, and do they not permit of a comparison between mushrooms and bacteria?

He adds the following fact to these proofs: The subcutaneous injection of the juice of certain noxious species causes the death of the lower animals, whereas they can eat these same species with impunity; but the injection of the juice of edible mushrooms does not cause any accident.

On the other hand, the species which are very nearly inoffensive, or which produce only slight and transitory troubles when they are eaten immediately after being gathered, become toxic if they are kept for any length of time.

Furthermore, when the symptoms of poisoning caused by certain kinds of mushrooms are compared with those provoked by tainted meat, the analogy is striking. It is possible to explain this second order of facts by admitting that, if the mushroom does not form, or has not formed, during the course of its growth the toxines which it contains, the framework of its tissues must constitute a very favorable medium for the culture of bacteria capable of producing toxines.

The commonest action exercised on the organism by the toxic mushrooms is shown by a more or less violent irritation of the digestive mucous membrane. The nervous system scarcely intervenes in the manifestation of toxic symptoms, inasmuch as muscarine is found in the meat of the ingested mushroom. There is always a certain constancy in the general progress of the intoxication; the variations which may be observed in certain manifestations may, it is true, be due to the presence or the absence of muscarine, but other factors may also intervene.

M. Pouchet thinks that the comparison he has established between bacteria and mushrooms is justified by the foregoing facts, and that the term large bacteria or colonies of bacteria is a very applicable one.

The remainder of the article is devoted to the forms of intoxication caused more especially by mushrooms of the genus *Amanita*, particularly the *Amanita mus-*

caria, and to the chemical constitution of muscarine and its action on the secretions. In conclusion, he states that besides muscarine the presence of neurine and choline has been ascertained in all poisonous mushrooms of the *Amanita* group at least, and these products are all habitual secretions of a rather large number of bacteria. These facts, he says, still further justify him in the comparison he has made with respect to the formation of toxic substances of the group of products, which are as yet not sufficiently determined, to which the term toxines has been applied.

The Repression of Dangerous and Offensive Spitting.—On December 12th the board of health of the village of Saranac Lake, N. Y., adopted the following:

“ *Whereas,* the expectorated matter discharged by persons having any disease of the air-passages (lungs, throat, mouth, and nose) usually contains germs capable of communicating the same disease to other persons; therefore be it

“ *Resolved,* that the board of health of the village of Saranac Lake does expressly declare that the indiscriminate discharge of such expectorated matter, in any place where it may be the means of communicating disease to other persons, is a nuisance dangerous to public health, and that this board does hereby adopt the following:

“ *Ordinance concerning Expectoration.*—Section 1. All persons who expectorate in consequence of any disease of the air-passages (lungs, throat, mouth, and nose) are positively forbidden to spit or discharge such expectorated matter upon the floor of any house, store, church, schoolhouse, hall, or upon any sidewalk, or in any dooryard or other place where such matter may be the means of communicating disease to other persons.

“ Sec. 2. Any person who shall violate the first section of this ordinance shall be liable to a penalty not exceeding five dollars for the first offense, nor more than twenty-five dollars for a subsequent offense, which penalty shall be imposed by and at the discretion of the board of health.”

This has been printed in the form of a public notice, and the following note added:

“ Hotels, inns, and boarding houses should provide suitable cuspidors for the accommodation of their guests. Cuspidors should be thoroughly cleansed and disinfected daily and should contain a small amount of germicide solution. Persons who have occasion to expectorate when on the streets should carry small pieces of cheese-cloth, which, after being used, must be preserved, and burned with as little delay as possible. Chinese paper napkins or toilet paper will answer a similar purpose. The casting of any of these aside, after use, where they may affect others, will be regarded as a violation of the ordinance.

“ Caution.—Handkerchiefs should never be used to receive expectorated matter. If so used they must be boiled, or soaked in a germicide solution, with as little delay as possible, and never be put with other articles to be laundered.”

We are glad to learn from the president of the Saranac Lake board of health that the people of the village are respecting this ordinance so generally that it has not yet been found necessary to impose a penalty in a single instance.

Scotch Merriment over a Doctor's Name.—The *Sun* recalls some amusing verses composed more than a hundred years ago concerning Dr. Philip Syng Physick, of Philadelphia, a renowned surgeon in his day.

“Dr. Physick,” says the *Sun*, “took his degree in medicine at Edinburgh University in 1792. His name, being ‘very singular but somewhat harmonious,’ appealed to the Scotch wits of the period, three of whom, one a lady, the others both advocates and afterward judges of session, combined to immortalize it in verse. This they did thus:”

Sing Physic! Sing Physic! for Philip Syng Physick
Is dubbed Doctor Phil for his wonderful skill;
Each sick phiz he'll physic, he'll cure every phthisic,
Their lips fill with Physic, with potion and pill.

If music, as Plato does stoutly maintain,
In every disease be a sovereign thing
For calming the spirits and cooling the brain,
Be sure, Doctor Phil, when you physic, to sing.

Lo! Physick! the college permits thee to work
In curing diseases the greatest of curses,
Syng! dance then with joy when thou think'st at one jerk
Physic can empty both stomach and purses.

What a fill up to physic, if Philip Syng Physick
His skill and his quill to support him shall sing,
Of fever and phthisic, each Master and Miss sick,
Of Philip Syng Physick the praises shall sing.

Each gap in the science of physic to fill up,
Old Phœbus young Philip Syng Physick bestows;
Then the potion and pill of Phil still shall we swill up,
And Syng shall be sung at the close of the dose.

The physic of Philip, so sweetly to swill up
Health, joy, and delight among mortals shall bring,
With pap and with praise, then, still Philip we'll fillip.
And loud Io Pæans to Syng ever sing.

O Death! since Phil physics, thy triumphs are past,
And broken thy dart is, and blunt is thy sting;
Phil shall fill us with physic, while Physick does last,
And while Syng Physick physics, will Syng ever sing.

To each creature his own is still dearest and sweetest;
Mine host loves old stings, and honey the bee;
Then Physick with physic still Philip shall fill up,
And sung by Syng Philip Philippics shall be.

When Philip's great son, as old chroniclers sing,
Fell sick, to great Philip for physic he clung;
The Philip with physic so filliped the king
That Physic and Phil by Timotheus were sung.
Now wake to Phil's pill box and Timothy's lyre,
Let Fame to my hero their blazonments bring,
Like Philip's great son he can bleed—or the sire
Can physic like Philip, like Timothy sing.

Syng Physick for fees seeks the sick man to physic,
But unsought hopes the fee of his physic and skill;
So ne'er let Phil Physick of physic the fee seek,
Nor the sick man be fee-sick of physic and Phil.

Let physic sing Philip, for Philip Syng Physick
From plain Philip Physick is dubbed Dr. Phil;
Sing Syng, then, each patient, while Philip shall physic,
And Physick shall fillip with potion and pill.

That Apollo the god is of physic and song,
Each schoolboy, I think, will full readily hollow;
Then since to his name the same arts do belong,
Be Philip Syng Physick our Magnus Apollo.

THE NEW YORK MEDICAL JOURNAL, April 3, 1897.

Original Communications.

THE REMOVAL OF LARGE NEOPLASMS OF THE NASOPHARYNX AND ANTRUM MAXILLARE.

AN ORIGINAL METHOD.

By JOHN A. WYETH, M. D.,
PROFESSOR OF SURGERY, NEW YORK POLYCLINIC.

There are few operations more formidable than those which are necessary to expose and remove a large tumor growing from any portion of the pharyngeal vault, or from the bones which surround the margin of the nares and antrum and project back into the nasopharynx. The following cases illustrate the procedures which may in very rare instances be required to successfully deal with certain forms of tumor in this region.

Mr. Charles B., twenty years of age, came under my care early in December, 1894, with this history: In December, 1892, he first noticed some difficulty in breathing through the nose. Three months later, he began to suffer from severe pain in the head which caused loss of appetite and insomnia. In June, 1893, Dr. R. P. Lincoln, of New York city, discovered a naso-pharyngeal polypus, which was treated with the galvano-cautery. From June 30 to November 18, 1893, the patient was absent on a sailing voyage. On November 21st he again consulted Dr. Lincoln, who found the tumor had grown considerably. On June 12, 1894, the growth was removed by Dr. Lincoln with the galvano-cautery and the patient greatly relieved. After this the cautery was applied to the base from which the tumor had been removed. In July, 1894, the left cheek began to swell and the left eye to be protruded. In the middle of November he began to break down rapidly, became restless, could not sleep, and suffered from great exhaustion after each application of the galvano-cautery. About this time he was examined as to the condition of his left eye by Dr. Emerson and Dr. Noyes, of New York. The last application of the cautery was made December 8, 1894, and a day or two after this he came under my care. He was pale, waxy, anæmic, and suffering from double vision. The left eye was wide open, the ball was protruded and pressed inward, resting partly upon the nose. The left cheek was swollen, and the tissues which occupied the pterygo-maxillary and zygomatic fossæ were pushed outward. A diagnosis was made of tumor of the nasopharynx, projecting into the antrum of Highmore, breaking through the posterior inner wall of this cavity and into the spheno-maxillary fissure and zygomatic fossa, pressure upon the blood-vessels causing venous congestion of the orbital cavity.

The following novel operation was deemed expedient and performed on December 12th, in the presence of my private hospital staff and Dr. Henry D. Noyes, Dr. J. B. Emerson, Dr. Robert C. Myles, Dr. R. H. M. Dawbarn, Dr. R. P. Lincoln, of New York city, and others. As a precautionary step, on account of his exsanguinated condition, a vein was opened in the arm and a pipette for saline injection introduced. An incision was made beginning along the temporal arch, two inches back of the outer angle of the orbit, following the temporal arch to the edge of the orbital cavity, along the frontal process of the malar bone, curving parallel with, and one eighth of an inch from, the orbital margin, until the point of the knife reached the infra-orbital foramen; then downward to the level of the ala nasi and outward through the cheek until the point of the knife neared the opening of Steno's duct. This incision was down to the bone from the point of beginning to the lower part of the superior maxilla, where the antrum of Highmore rests upon the alveolar process of the upper maxilla opposite the first molar tooth. Hæmorrhage was carefully stopped throughout the entire incision by pressure and by ligating with catgut the larger vessels which were divided, and the soft tissues were in no way dissected up from the bone, except when it became necessary to enter the orbital cavity in its outer half, where the tissues were carefully dissected away from the bone and the eye displaced toward the median line, taking care not to press upon or injure this organ, until the anterior commissure of the sphenomaxillary fissure came into view. I then hurriedly passed in this a keyhole saw with the teeth turned upward, and rapidly sawed through the junction of the malar with the frontal bone. The saw was then turned over, with the teeth directed downward, and beginning at the same point I rapidly sawed through the floor of the orbital cavity, traversing the infra-orbital foramen until I had sawn through the antrum of Highmore at the level of the alveolar process of the lower maxilla. A hook was then placed in the outer angle of the orbit and a quick, sharp jerk fractured the zygomatic process of the temporal bone, displacing the side of the face, completely exposing the antrum of Highmore, the zygomatic fossa, and the pterygoid and sphenomaxillary fissures. The hæmorrhage was profuse, but was controlled by rapidly packing sponges into the wound and making firm compression. The pulse jumped from about 80 to 140, and the patient seemed about to expire in collapse. At this juncture one pint of saline solution,

already prepared, and kept so hot that the hand could scarcely be borne in it with comfort (110° to 120° F.), was allowed to run into the vein. The heart rallied at once and the pulse came down to 85 beats to the minute. The tumor was again exposed and with a periosteal elevator lifted out of the antrum of Highmore, its attachments to the pterygoid process of the sphenoid bone being separated by removing the periosteum. By opening the patient's mouth and thus depressing the coronoid process of the inferior maxilla, the pterygomaxillary fissure and the zygomatic fossa were well exposed. The whole antrum was packed with a long wick of iodoform gauze, which was allowed to project at the anterior inferior angle of the wound, from which it was drawn on the third day after the operation. The bone, which had been temporarily displaced with the soft parts adherent, was then brought back into position and held there by stitching the soft parts along the line of incision. A bandage and compress were applied in order to maintain approximation. No sutures were inserted in the bones. The patient made an uninterrupted recovery. He is now, more than two years after the operation, entirely well. The bones united in their normal position; he has perfect use and function of the eyeball, and, although the filaments of the facial nerve were divided, he still has very fair motion of the orbicularis palpebrarum muscle. Disfigurement from the scar is insignificant.

Besides the novelty of this procedure, there are three points which may be deemed of interest: First, the character of the anæsthetic, morphine being almost entirely relied upon. The amount of chloroform taken was only two drachms in an hour and forty minutes of narcosis. I have done a number of major operations with this combination of morphine and chloroform, or morphine and ether, in operations about the respiratory tract, and, in one instance in removal of the larynx, I used nothing but morphine and obtained complete narcosis and anæsthesia, the operation lasting an hour and thirty-two minutes, without chloroform or ether, the patient remaining perfectly quiescent during the operation, suffering no shock, and with no memory of pain.

The second important point is the value of transfusion with a salt solution to prevent collapse and shock under great and sudden loss of blood. During this operation five pints in all were allowed to run into the veins, and the blood became so thin that practically salt water ran out of the vessels in the line of the incision, showing the red corpuscles were almost exhausted, and yet we were able to make the patient's pulse drop from 130 to 140 to 80 or 90 beats per minute, full and strong, showing that the heart had plenty of volume to act upon and so did well.

Finally, the persistence of motion in the orbicular muscle of the lids after division of the branches of the seventh nerve.

For the following study of the nervous distribution of the orbicularis palpebrarum I am indebted to Dr. J. A. Bodine of the New York Polyclinic:

"The orbicular portion of the muscle is supplied solely by the facial nerve. This portion, however, is not necessary to the act of closing the eye. In fact, the palpebral portion is quite distinct from the orbicular, and its action is habitually involuntary. It receives nerve impulse from the sympathetic plexus around the cavernous sinus. In addition to the nerve fibres from the seventh, the upper lid may and does get motor impulse thus: The ophthalmic or first division of the fifth receives fibres from the fourth and third, and frequently from the sixth, prior to its division into nasal, frontal, and lacrymal. Some or all of these motor fibres may go with the lacrymal branch of the ophthalmic. After the lacrymal supplies the tear gland, it sends fibres to the upper lid (Gray, page 760).

"Again, the lacrymal not infrequently arises by two filaments, one from the ophthalmic and one from the sixth nerve; thus the upper lid would get motor impulse from the abducens (sixth).

"Again, if the ophthalmic has received motor fibres from the fourth, third, and sixth, as already stated, the supra-orbital branch of the frontal nerve, which goes partly to the upper lid, would carry motor influence, and from this same (frontal) nerve the lower lid could be supplied through the infratrochlear.

"Of course, the act of lifting the lid depends upon the levator palpebræ supplied by the third nerve."

Fortunately, so formidable an operation as the one just detailed will rarely be called for. The vast majority of neoplasms of the nasopharynx can be successfully and satisfactorily reached through an incision into the antrum of Highmore. The following case is illustrative:

C. L. C., thirty-six years of age, native of Georgia, came under my care July 22, 1895. In March of that year he noticed that breathing through the left nostril was interfered with. This symptom increased until there was complete closure of this passage, accompanied by great pain throughout the whole left upper jaw. The cheek began to bulge, and soon after this complete anæsthesia ensued in the entire area of the second division of the fifth nerve; sensation in the two other branches of this nerve was normal. A second tumor appeared at this time in the submaxillary region of the left side, just in front of the sterno-mastoid muscle. This also grew rapidly, and, when he came to me in July, I discovered a tubercular lymphoma in this region as large as my fist, which I removed. An incision was made, commencing at the outer angle of the left eye and carried along the inferior edge of the orbital cavity to within a quarter of an inch of the level of the inner canthus of that eye. The direction was then changed and the incision carried along the facial line down and then outward and near the orifice of Stenson's duct, following the facial line or crease. The soft tissues were dissected up close from the bone, and the flap displaced by a silk suture retractor. The anterior wall of the antrum of Highmore was chiseled away until the cavity of the antrum was freely exposed, and through this opening the tumor, which filled the antrum and projected into the naris and backward into the nasopharynx, was easily removed. It was a large gray mass, which under the microscope was discovered to be non-malignant, a myxoma or soft polypus. A sponge tampon behind the soft palate prevented any blood from falling into the larynx. The slight hæmorrhage was controlled by packing with a wick of iodoformized gauze, which was removed on the second day from the lower angle of the wound. The patient made a rapid recovery, and left for his home on the 19th of August. The scar was insignificant.

I am convinced that for almost all neoplasms this simple procedure will give the greatest satisfaction. The loss of the anterior wall of the antrum caused no sinking in of the face whatever after the wound healed.

Temporary resection of the upper jaw or chiseling through the hard and dividing the soft palate in order to remove neoplasms of the nasopharynx, are formidable procedures and objectionable, the former on account of the disfigurement which such an extensive incision will cause, and the latter because it is almost impossible to restore the palate to its normal position and function. They possess no advantages over the operation just described.

RENAL TUBERCULOSIS.

By F. TILDEN BROWN.

(*Continued from page 380.*)

THE pathology of renal tuberculosis is the same as that of the disease elsewhere, and its descriptive anatomy is mainly dependent upon the mode of invasion, the activity of the disease, whether or not the ureter becomes occluded, and the virulence of the contagium, or the powers of resistance of the individual.

Durand-Fardel has shown the bacilli present within and outside of the vessels of a glomerulus, where no cellular accumulation had yet taken place. We can believe that the bacilli when here found had been present too short a time to effect those changes which are recognized as the early ones of the tuberculous pathology. Since the publication of those valuable contributions of Prudden and Hodenpyl in experimental pathology we believe that these early stages are not necessarily due to any vital attributes on the part of the living bacilli, but that the positive chemotaxis of the proteids of these dead micro-organisms is an equally effective agent, if not the sole cause of the cellular approach and concentration.

However, in tuberculous disease, the appearance of these epithelioid and giant cells, the latter often containing one or more tubercle bacilli, and the entire cluster surrounded and interspersed with lymphoid corpuscles or leucocytes, is the typical picture of a commencing miliary granulation. This lesion, microscopic at first, progresses to a stage where it becomes a grayish-white or yellowish tubercle, large enough to be seen by gross inspection, and to be felt (Figs. 1 and 2). The further development of this single lesion or the coalition of several similar lesions leads, by coagulative necrosis, to the cheesy nodule. When this is sufficiently augmented at the expense of the surrounding tissue, it breaks either into one of the calices, or, much more rarely, lifts the renal capsule and forms a tumor between it and the cortex, or, perhaps more rarely still, breaks through the capsule and institutes a perinephritic tuberculosis.

Instead of a spherical necrotic advance, the disease may assume a linear intertubular fibro-cellular extension, and when thus generally disseminated give rise to a genuine tuberculous cirrhosis of the kidney, as described by Enriquez and Hallon, Hanot and Gilbert, and Coffln. Recently Widal and Bezançon, in an experimental tuberculosis, believed that the sclerosis they had produced in the kidney was dependent upon an insufficient virulence of the bacilli in respect to the tissues of the individual.

At times, by the access of pyogenic organisms to the pure tuberculous foci, large abscesses result. We do not know, however, what conditions are necessary to transform the contents of a shut-up tuberculous lesion into hard, puttylike masses which at times resemble those of a dermoid cyst. Tuffier thinks the obliteration of the ureter is essential to this change. Again, it is not very infrequent to find deposits of carbonate and phosphate of calcium in the cellular or connective-tissue degenerations of tubercle, particularly in very chronic states, or in those lesions which are considered to be healed. When small concretions are passed in the urine by persons with suspicious symptoms, an examination of the powdered dust of a minute calculus will at times reveal the bacilli when a most thorough search of the urine has proved negative. This was the case in one of my patients. The calcareous concretions passed at one time are seen in this phial, and the drawing shows the tubercle bacilli in the detritus of one of them.

The not uncommon deposition in the bladder of considerable masses of cementlike material, due in part to the hyperæmic state of the vesical mucous membrane, and in part to the precipitating influence (?) upon the urine salts of the albuminoid necrotic matter descending from a tuberculous kidney, at times calls for cystotomy. Here the vesical symptoms and the detection of a stone may mask the long antedating renal disease.

Such an interesting case was seen in a boy of fourteen who, when admitted to the Presbyterian Hospital four months ago, was extremely emaciated; he had a high temperature and pulse, and his outlook appeared most hopeless. The history showed that for two years he had had frequent and distressing urination. During the past eight months he had been treated by different attendants for bladder affections. The experienced surgeon who sent him to the hospital on seeing him for the first time detected a vesical calculus, and by epicystotomy removed a cretaceous soft mass of the size of a hen's egg. The state of the urine, as well as the vesical and general systemic conditions, was not so greatly improved as had been hoped; then a tumor in the region of the right kidney became apparent and increased rapidly. This was regarded rather as a pyonephrosis originating from an ascending vesical infection. I adjudged the kidney to be tuberculous, and the starting point of the long-existing bladder irritation. The tumor was now enormous and demanded immediate attention, whatever its nature; and, despite the inability to exclude the existence of other tuberculous foci, I advised and performed extraperitoneal nephrectomy. A great quantity of thick, creamy matter had to be evacuated by tearing the cortex at numerous places before the still large but now collapsed organ could be removed. Then the ureter and seminal vesicles, examined through the wound, were discovered moderately enlarged and hard—undoubtedly tuberculous, as the kidney (Fig. 15) was found to be by Dr. Thacher. Notwithstanding the presence of these remaining foci of the disease and possibly others of greater moment, he gained weight and vigor with striking rapidity, leaving the hospital at the end of five weeks with the wound closed. Since his worldly condition precludes any prospect of climatic advantages, I think his respite from another crisis of the same nature can not be long expected. Of added interest in this case was a three-inch urethral occlusion, involving the meatus—apparently due to erosion of its mucous membrane by the passage of urine loaded with crystalline matter, or the existence of tuberculous lesions, or both, as well as the erosive and congestive effects of catheterism during weeks for vesical irrigation, before the epicystotomy had suddenly left the denuded urethra in a state of collapse and repose favorable for occlusion by granulation.

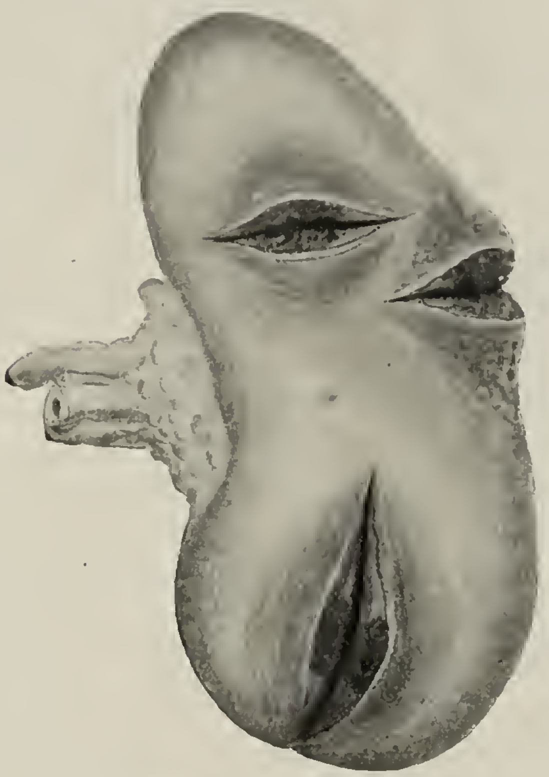

FIG. 10.—Septic kidney (*Bacillus coli communis*), tenth day. Nephrectomy by Dr. C. McBurney. (Brown.)

The membranous urethra was opened through the perinæum. A small steel sound was safely forced forward out of the meatus. The new perineal wound was kept open for temporary drainage, to favor healing of the suprapubic one, and to spare the just-opened anterior urethra the irritating contact of urine.

Cystic degeneration of tuberculous origin and independent of ureteral occlusion is believed by some authors to occur. Klippel fully reports such a case. Both kidneys were similarly affected, but in different degrees. The contents of the cysts were more or less turbid and flocculent with cheesy *débris,* and some cysts had ruptured into the calices. Neither of the pelves or ureters were dilated, thickened, or inflamed. Such cystic lesions are evidently started by the contagium coming to the kidney by the blood. Tuberculous hydronephrosis is most commonly initiated by ureteral occlusion due to ascending disease. Tuberculous pyonephrosis can just as readily be due to occlusion caused by cheesy *débris* derived from the already infected kidney. In the former cases Tuffier has shown not only the impermeability of the ureter, but that the clear yellow retained fluid is free from all micro-organisms except tubercle bacilli, and they are only rarely found microscopically; but experimental injection of the fluid always proves its true nature.

The appearances of a kidney attacked by an ascending tuberculosis are emphasized by a dilatation and thickening of the walls of the ureter and pelvis (Fig. 8, and right-side organs, Fig. 9). The walls are tough, irregular, ulcerated, studded with soft tubercles and broken-down tuberculous tissue. The calices partake more or less of these manifestations before the apices of the pyramids become dotted with tubercles. It is at these papillæ that the renal parenchyma encounters the ascending infection which now spreads upward, involving particularly the connective tissue and uriniferous tubules; the vessels, although more resisting, undergo obliterating destruction; a persistent microscopic amount of blood is lost, and at infrequent intervals a real hæmorrhage may take place. Finally, large excavations in the gland result, the communications of which with the pelvis are open and wide, quite different from the narrow-necked channels connecting the cavity of a lesion of vascular origin with the pelvis. See the contrast in right and left kidneys (Fig. 9); the same contrast also in Figs. 7 and 8.

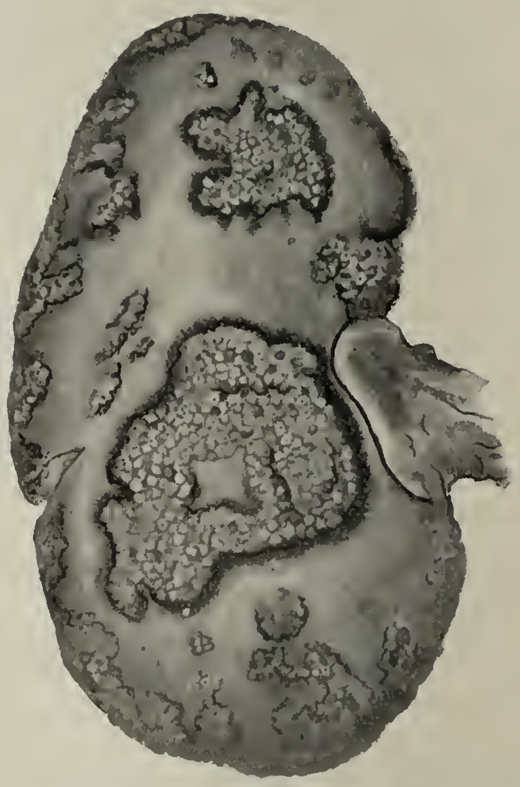

FIG. 11.—Septic kidney (*Bacillus coli communis*), undetermined age. Nephrectomy by Dr. A. J. McCosh. (Brown.)

Some of the rarer manifestations of tuberculosis in the kidney are:

Renal epithelial tuberculosis (Johnson).
Renal ecchymotic tuberculosis (Rayer).
A specialized form of tuberculous nephritis, due t

the compression of the uriniferous tubercles by the sclerosis already referred to (Coffin).

Tuberculous renal cicatrization of Dieulafoy, Bard, and Le Dentu. The latter admits that such spontaneously cured kidney tuberculosis is rare, but that it does occur.

Glomerulo-tuberculosis, where these bodies alone show invasion and the endothelial cells fill Bowman's capsule at the expense of the glomerulus, which is compressed and finally obliterated (Cornil and Brault, Durand-Fardel).

Tuberculous perinephritis is not strictly within our subject, and its consideration is purposely omitted.

The recognition of a tuberculous kidney macroscopically at operation or even at necropsy is not always easy. This is particularly true of those specimens where the lesions are small, and again, where they are very large and manifest free suppuration, for, in the latter cases, if tubercle bacilli instituted the lesions, some subsequent pyogenic infection has occasionally augmented them, and perhaps obscured the characteristic initial features of their tuberculous pathology. The renal lesions most easily mistaken for those of tuberculosis are some where other micro-organisms are the presumptive factors, as where only the *Bacillus coli communis* is found (Figs. 10 and 11). The lesions in these two kidneys represent periods in the early stages of what would probably have ultimately resulted in the so-called surgical kidney. Even in the early stages of septic infection the organs are slightly enlarged, and their surfaces show lesions. The surfaces of the organs show lesions which are resisting and raised. They occur as isolated small papules or in irregularly circular plaques of confluent individual papules, which in places have become pustules, and then either open ulcers or depressed cicatrices where the minute abscess has been absorbed. The dusky color of the lesions and the surrounding inflammatory zone distinguish them clearly from the typical miliary tubercle or nodule seen in the same situation on the surface of the cortex in tuberculosis (Fig. 1).

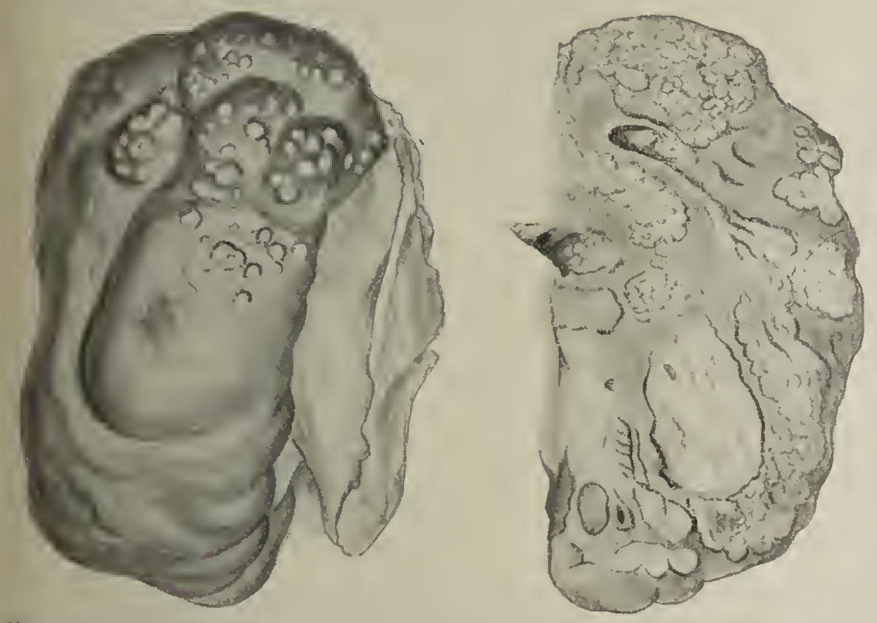

FIG. 12.—The surface and sectional appearance of a kidney with disseminated neoplasms. Adrenal adenomatous growth or endothelial sarcoma. Nephrectomy by Dr. L. B. Bangs. (Brown.)

The surgical kidney can present itself in two forms—most commonly in surgery as a greatly enlarged organ containing a varying number of suppurating foci with thin retaining walls of a dusky purplish color. The pus is often thin, owing to an admixture of the gland secretions. Less frequently is to be seen an organ which is contracted, hard, and densely cicatricial, so firmly adherent to the circumrenal envelope as to be removed only with considerable difficulty. By noting the acute superficial inflammatory process in Fig. 11 it is easy to understand that with the subsidence of this series of minute but confluent pustules, adhesions, cicatrices, and irregularities of surface would result; and, if the same mode of healing attends similar foci scattered in the medulla, very great impairment of the organ must follow.

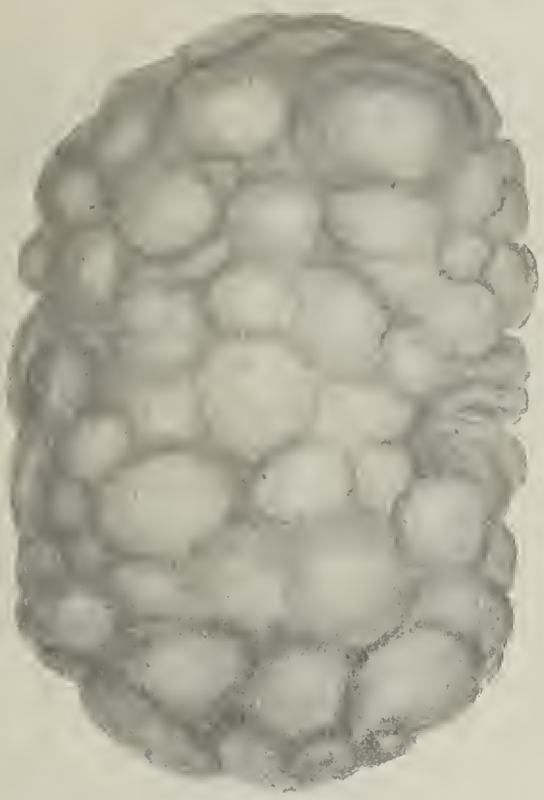

FIG. 13.—"Cancer" of kidney. (Rosenstein.)

Again, some lesions of neoplasms (Figs. 12 and 13), of syphilis, of malaria, and of leprosy can be mistaken for those of tuberculosis.

The impressions produced by minute disseminated carcinomatous foci and those larger yellowish-white cancerous deposits of a firm, cheesy consistence are at times misleading. In a recent necropsy I saw these small cancer lesions in the lungs and kidneys, and they strikingly resembled those of gray miliary tubercles, while the massive, puttylike yellowish deposits in the liver were fairly suggestive of the necrosis of the same disease.

A fine specimen of renal neoplasm causing a very large kidney, removed by Dr. Bangs at St. Luke's Hospital, is shown in Fig. 12. The exact classification of this as well as many somewhat similar renal tumors is in dispute (Tuttle).

In contradistinction to the yellow, cheesy necrosis of tuberculosis, Baumgarten likens the consistence of syphilitic gummata in the kidney to that of lard; besides, these are, even when large, grayish white, and their slighter tendency to central softening in proportion to their size is perhaps the reason which permits of a better artificial staining than is attainable with the necrotic centres of tuberculous nodules.

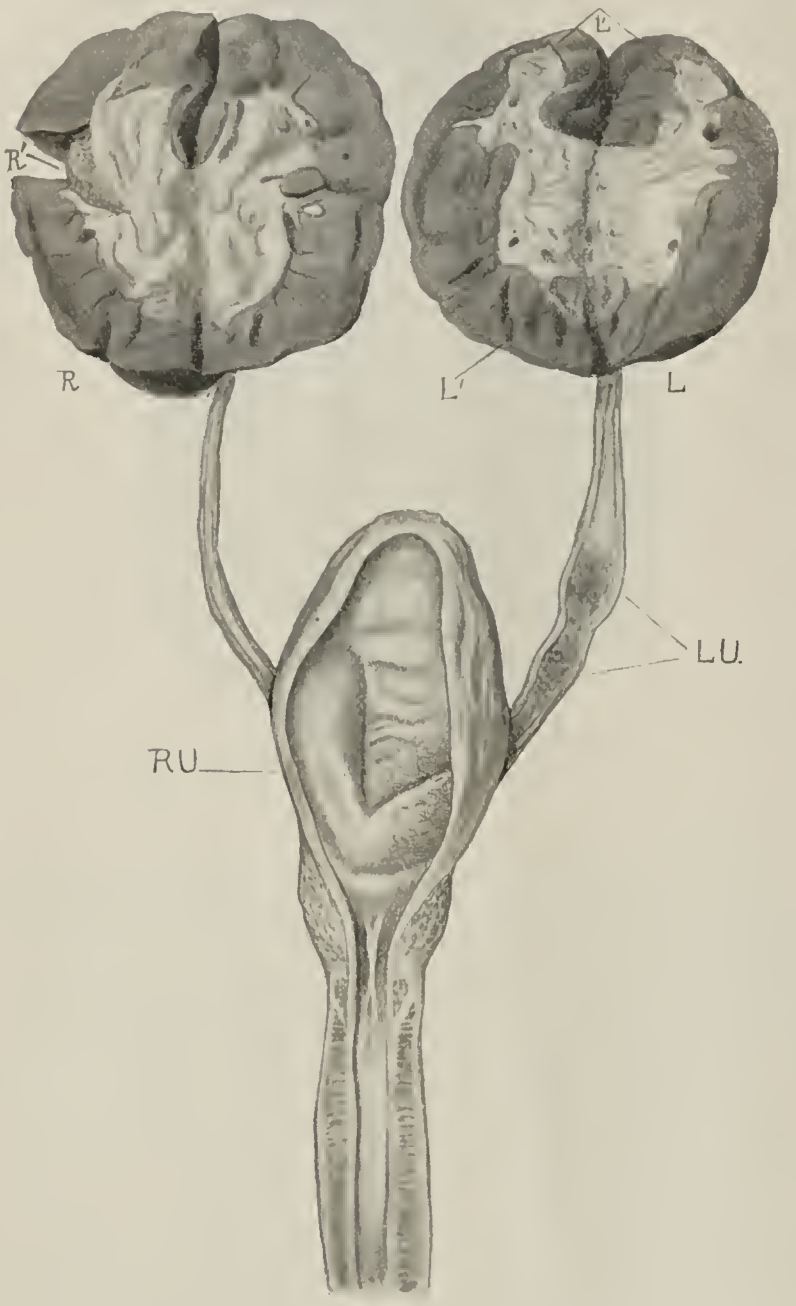

FIG. 14.—At L′, two tuberculous foci in the medulla of the left kidney; each is in communication with the renal pelvis. At R′, a single focus in the medulla of the right kidney, the communication of which with the pelvis could not be demonstrated. L U, a double dilatation of the left ureter containing a number of tubercles. About the left ureteral opening there are no tubercles, but a marked sympathetic hyperæmia pathognomonic of a descending tuberculosis. R U, the right ureteral opening overlying a large tuberculous seminal vesicle. (Original.)

Miliary·tubercles are said to be closely simulated by the gross kidney lesions found in persons dying of acute malarial fever. Osler speaks of the occlusions of the renal arterioles by the parasites of malaria as not so very uncommon, and Soldatow as well as Kiener and Kelsch describes the pinhead-sized granulations made up of small embryonal cells and leucocytes infiltrated into the connective tissue about the occluded vessels. These lesions never tend to suppuration or cheesy necrosis. The not exceptional occurrence of severe hæmaturia in malarial subjects offers as well during life a chance to misinterpret for a tuberculous one this clinical manifestation common to both diseases.

That faulty observations in the deadhouse were once more common than now is instanced by many of the earlier statistics regarding renal tuberculosis. The more carefully these examinations are conducted the greater is the percentage of cases showing renal invasion—a remark apropos as well of the result which will attend more careful clinical study among the living and the use of the improved bacteriological and instrumental resources of the present time.

In the year 1849 to 1850, in 94 necropsies upon tuberculous subjects in Prague, Engel saw but one case of renal tuberculosis, and Willingk, from 1850 to 1852, in 476 tuberculous bodies saw but seven cases. Chambers, however, in 1852—and he refers to his records as so strikingly at variance with those of previous statisticians as to almost excite incredulity—observed in 503 tuberculous cases 91 of renal involvement: eighteen per cent.

Recently Bondurant * has published some interesting statistics of tuberculosis among the insane. They have no direct bearing upon our special subject, and will only be referred to in connection with the relatively greater susceptibility of the negro to the disease, the diminished power of resistance, and the greater death-rate in this race. Thus, in the white race, 179 bodies showed twenty-eight per cent. affected with tuberculosis; in the negro race, 116 bodies showed forty-two per cent. affected with tuberculosis; 14 whites and 2 negroes on autopsy showed complete arrest of former tuberculosis; 50 whites on autopsy showed miliary tuberculosis 4 times; 41 negroes on autopsy showed miliary tuberculosis 15 times.

Very chronic forms of tuberculosis, so common among the white patients, were rare among the negroes.

Morris's figures show during ten years at Middlesex Hospital, 2,610 total necropsies, and among these were encountered 44 cases of renal tuberculosis—somewhat less than two per cent. Of these 44 cases 29 were of the miliary form, 15 of the "scrofulous," caseating form.

Of the 29 cases of miliary form, all showed tuberculosis in other organs than the kidneys, and in only one of these 29 cases was a single kidney involved. Of these 29 cases, 18 were in males, 11 in females. As to age, the first decade contained the greatest percentage.

Of the 15 cases of "scrofulous" kidney, both organs were diseased in 8.

The detailed statistics show that of the 15, 14 revealed tuberculous lesions in other organs than the kidneys; but, as the author remarks, "it must be borne in mind that the conditions found at death do not prove that the scrofulous kidney did not exist for some time as the only disease in the body, and that it may even have been the primary lesion from which the others were derived." In two of the cases this fact unquestionably appeared true.

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* *New York Medical Journal*, February 23, 1895.

Of these 15 cases of scrofulous kidney only one occurred at an age under eleven. Nine males and six females were affected.

Dickinson's and Steinthal's statistics of renal tuberculosis, added to those of Morris, make a total of 134, and these show that in a little more than fifty per cent. both kidneys were diseased, though not to the same extent.

By the courtesy of the pathologist, Dr. Thacher, I have had access to the morgue records of the Presbyterian Hospital, an institution whose medical and surgical service is about equal; and four per cent. of the patients are children.

From the records covering three years and three months, February 1, 1893, to May 1, 1896, I have made the following compilation:

The total number of autopsies in this time was 567; the total number of bodies showing tuberculous lesions anywhere, 68, or twelve per cent.; the total number of bodies showing tuberculous lesions of the kidneys, 23; the total number of bodies showing tuberculous lesions of the spleen, 12; the total number of bodies showing tuberculous lesions of the liver, 9. Thirty-four per cent. of tuberculous bodies showed infection of one or both kidneys; 17.6 per cent. of tuberculous bodies showed infection of the spleen; 13.2 per cent. of tuberculous bodies showed infection of the liver. Of the bodies showing renal infection, thirteen were males and ten were females.

The extremes of age represented were two months and a half and seventy-four years.

Under five years the spleen and liver were more commonly the seat of tuberculous lesions than the kidney; in adults the reverse appeared from these few cases:

	Kidney infected.	Spleen infected.	Liver infected.
1 month to 1 year	1	1	1
1 year to 5 years, inclusive	4	6	4
5 to 10 years, inclusive	1	0	0
10 to 20 years, inclusive	0	0	0
20 " 30 " "	6	3	1
30 " 40 " "	4	0	1
40 " 50 " "	4	1	1
50 " 60 " "	2	1	1
60 " 70 " "	0	0	0
70 " 80 " "	1	0	0
	23 *	12	9

* Thirteen males, ten females.

In two bodies the spleen showed infection where the kidneys did not; in one body the liver showed infection where the kidneys did not; in fifteen bodies both kidneys showed infection; in eight bodies one kidney showed infection; in two bodies both adrenals were markedly tuberculous, while in each only one kidney was affected. There was not one body which showed tuberculous lesions of the kidneys, spleen, or liver where either one or both lungs did not reveal active or healed lesions. Of the sixty-eight bodies showing tuberculous lesions, a considerable proportion had not died from the disease.

Clinical observations, however, place the subject of local tuberculous lesions in a much more favorable light than do those of necropsy records, partly for the reason advanced by Morris, and partly, I believe, because active lesions found in the lungs at autopsy are at times so insignificant as to have made them unrecognizable by physical signs and symptoms, and in this situation promising to be very chronic, or they may here be lesions for a long time inactive, and in only a limited sense appear as contraindications, even if known to exist, to some radical operation upon a localized tuberculosis elsewhere. Such inactive lesions Jordan describes as those of clinical recovery, but not anatomical recovery. During the past few years many writers besides surgeons have insisted upon the sole localization of tuberculosis in other organs than the lungs, and for that reason they have advocated operative interference. Thus, Osler, in seventeen necropsies following tuberculous peritonitis, saw five cases showing that the process was wholly confined to the peritonæum.

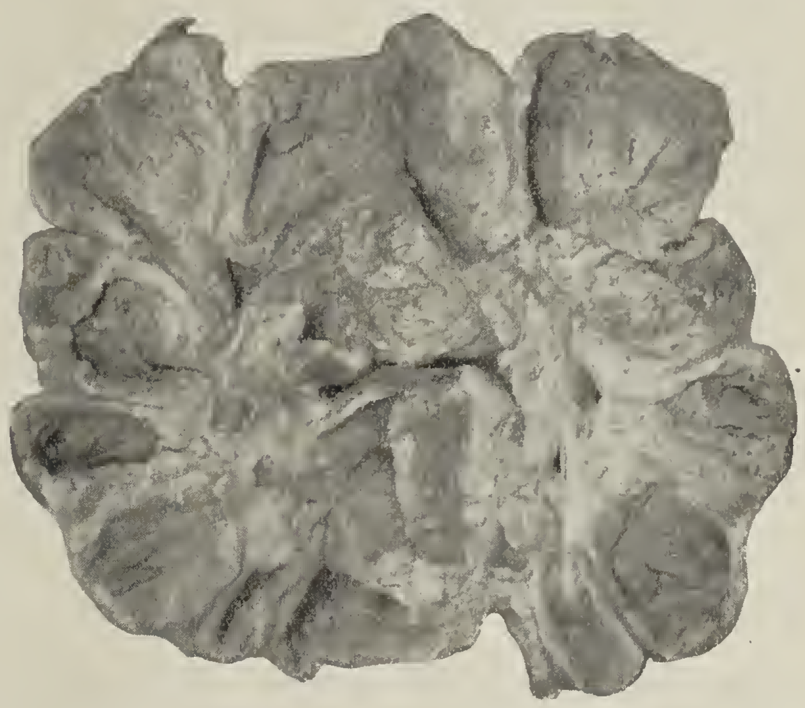

Fig. 15.—Cortical and medullary infection resulting in an enormous tuberculous kidney, each of the twelve pyramidal portions being transformed into a discrete pus sac requiring multiple lacerations to evacuate before the organ could be extracted. (Original.)

The susceptibility of the kidney to infection by pathogenic germs carried to it by the blood has been clearly demonstrated, whereas the potency of the lymphatic channels for rapid and wide germ dissemination is not so well established, yet in the distribution of bacteria by the continuity of their pathological processes for limited distances and by comparatively slower progress, the efficacy of the lymphatics is perfectly appreciated. That this is the mode of dissemination in an ascending renal tuberculosis I am inclined to believe, as well as the mode of extension of the disease to the other parts of any already infected organ or group of organs.

Hewertson says that in Johns Hopkins laboratory it is almost the rule in examining bodies with intestinal lesions to find bacteria lodged in the internal organs, and more particularly in the kidneys.

It was a good while ago ascertained that the secretions and tissues of the healthy body do not contain bacteria, and it is now equally well recognized that when bacteria have gained an entrance to the body they may appear in the secreta. Particularly is this true when the germs are such as are known to be capable of exciting lesions in the organs affording the secretion. Thus in Wyssowkowitsch's experiments in seventeen animals subjected to intravenous injection of different micro-organisms pathogenic to the kidneys, thirteen times were the germs found in the urine.

The non-pathogenic germs, on the other hand, after a while disappear wholly from the circulation without having appeared in the secreta.

As long ago as 1882 Cohnheim maintained that by renal excretion the human organism possessed the means of ridding itself both of dissolved and organized poisons; among the latter he included tubercle bacilli, and he held that they could be transferred from a pulmonary source by the blood to the urine and so enter the bladder, there to establish a tuberculosis without injuring or infecting the kidney during their passage.

Von Kahlden professes to have observed kidneys through which the bacilli have filtered, and which organs did not present the slightest alteration caused by the transit of the bacilli. The impossibility, however, of a thorough examination of the entire secreting tissue of a kidney must be apparent.

The investigations of Cavazzani and Wyssowkowitsch led them to conclude that this passage of micro-organisms through the renal membrane could not occur prior to some lesion of the renal epithelium, and that such a lesion was associated with the escape of blood.

From his own experiments Sherrington decides that because proteids are not always discoverable in the urine, it is not necessary to insist upon the conclusions of Wyssowkowitsch and others, according to which noxious bacteria escape in the secreta only when the blood itself containing them escapes. And yet he admits that his deductions are equally opposed to the extreme views of Cohnheim and others, who assert that the transit of bacteria across the renal membrane occurs while it is still normal in condition.

"This membrane," Sherrington says, "is rather to be regarded as then exhibiting in a minor degree the pathological change which, when increased, will render it pervious to the same extent that the capillary wall becomes pervious in an area of inflammation." This opinion he believes to receive support from the fact that the injected germs are not immediately found in the secreta, but only subsequently, after the poisons produced by the infection have had time to act upon the membrane and render it pervious.

Sherrington adds: "Among the species observed to escape through the membrane, even in the absence of escape of blood, are some that are not motile; this suggests that in their transit across the secreting membrane the bacteria themselves are passively conveyed, that the transit is less an active migration than a passive transference."

It is, then, a pertinent question whether victims of more or less general tuberculosis can present tubercle bacilli in their urine and yet not have a renal tuberculosis. One of Sherrington's experiments (No. 17), already referred to, would lead us to believe that this is possible.

I saw two years ago a case where this hypothesis could not but be considered. Six months earlier I had resected the tuberculous left knee of a man twenty-eight years old, who, since ten years of age, had given evidence at different times and in different regions of this specific disease. Three months after the resection McCosh removed his tuberculous right testicle. Although this man had never experienced any urinary symptoms, I examined his urine before the last operation, and found tubercle bacilli in each of four mountings. I then examined the patient more closely in reference to vesical or renal symptoms, but with negative result. By this I was led to infer that the bacilli must have come from the urethra, prostate, or seminal vesicles. To test this presumption, some two weeks later I drew the urine by a sterilized catheter, allowing an ounce, for cleansing the eye, to run off uncaught. As before, the urine by gross inspection was quite clear, but by centrifugal sedimentation a trifling number of pus corpuscles were obtained, enough to make six very slim mountings. Tubercle bacilli were found in each; in nearly every instance the bacilli were in the leucocytes.

The urine was sterile to culture on the ordinary media. It was acid, of 1.022 specific gravity. There was not a trace of albumin, and, of course, no blood was found microscopically. The patient did not have to urinate during the night, and he had no frequency during the day.

This catheter test does not, of necessity, warrant the positive conclusion that the bacilli came from the kidney; but had they come from a vesical lesion, I think some epithelial cells would have been found with the pus cells. Since leaving the hospital I have seen this patient several times, and always found him going about in what he called "good health," having gained about fifteen pounds since his operation. All attempts to get some subjective evidence of urinary trouble were futile.

(To be concluded.)

The Medical Society of Saratoga Springs.—An esteemed correspondent informs us that this society, although less than two years old, is doing good work. Among its members are included several physicians of Ballston Spa, Sandy Hill, South Glens Falls, and Wilton. The regular meetings are held once in two weeks, on Friday nights. The officers are Dr. George T. Church, president, and Dr. John B. Ledlie, secretary.

PULMONARY TUBERCULOSIS AND THE BOARD OF HEALTH.*

By WILLIAM L. BANER, M. D.

The action which has recently been taken by the board of health of this city relative to pulmonary tuberculosis is of such vital interest to the medical profession that it seems to merit the most careful consideration and the fullest discussion. Our board of health has been and is doing such good scientific work, and, through its bacteriological department, is aiding the profession so materially toward the better understanding of disease that anything in the nature of criticism seems but poor thanks for efficient services rendered. And, moreover, from the strictly scientific aspect of the question, the position of the board of health seems to me unassailable, but there is a question of expedience which arises in matters of this kind, and certainly from this standpoint there is something to be said against the forced registration of tuberculosis and against the acquirement by the health department of hospital facilities for its treatment. In the first place, will forced registration produce benefits at all in proportion to the hardships entailed? Let us consider both the credit and debit sides of the question and see where the balance lies.

What good will it do? It will enable the health department to place circulars of instruction in the hands of every tuberculous patient so reported. It will enable them—if the rule is largely observed—to map out, to some extent, the geography of the disease, as regards this city, from which some knowledge may perhaps be gained. Beyond this it can accomplish absolutely nothing. It will not enable the health board to take the twenty thousand people now suffering from this disease in New York city from their homes and place them in hospitals. It will not enable them in the present state of public opinion to isolate them in their houses, or prevent their attending to their various vocations if able to do so. It will not be possible to inaugurate any system of surveillance which will prevent the phthisical from expectorating in the street or in public conveyances—any more than if they were not so registered. This seems to me to be giving very high valuation to the printed instructions. My own experience has been, and I think the members of this society will agree, that these printed forms have a definite value when explained and indorsed by the physician in charge, but that the family always depend upon their own doctor in these matters.

What harm will this regulation do? It will deter patients who suspect any lung trouble from applying early to their physicians, and thus the golden opportunity for cure will be lost. It will brand for life, as consumptive, the sufferers from a disease from which a majority recover under proper treatment. It will make physicians very loath to give a diagnosis of tuberculosis, and it seems to me that a very important element in treatment is to be able to make such diagnosis early and to explain to the patient fairly and squarely the nature of his trouble and the hopefulness of the situation, and then to start in systematically with that form of treatment which seems best adapted to the circumstances in which the patient is placed. It will make public record of certain facts affecting the pockets of every landlord, for it must be remembered that it is being made very expensive for owners of apartments to rent them to consumptives, owing to the regulations regarding renovation. This fact under a board of health less careful than the present will be a decided menace to the secrecy of the records.

Considering, then, the very slight benefits which can be hoped for from compulsory registration, are they not outweighed by the disadvantages and dangers? The whole question seems to me to hinge on the exact nature of the infection of pulmonary tuberculosis. In a letter from Dr. Hermann M. Biggs, pathologist to the health board, to the writer, he says: "One fact which has been particularly emphasized in all of the actions of the health department and which has been constantly ignored in the criticisms of the department's action is that persons suffering from pulmonary tuberculosis are not sources of danger to their most intimate associates, providing only that the sputum be properly disposed of." This is, I believe, the position taken by all who have made careful study of this subject. It is, moreover, generally accepted that the patient suffering from this disease who fails to properly dispose of his sputum is a perpetual source of danger to himself from self-infection. Therefore, the actual treatment of the phthisical patient includes this question of sputum sanitation, so that, if he is properly treated, he is in no wise a menace to the community. In this connection it must be remembered that the inspectors of the health department in their house-to-house visits reach the class of consumptives who are not under medical care and who from their own ignorance and from the conditions in which they live constitute the greatest actual danger. It would seem that more effective work would be done by the board if their energies were continued in the direction of educating the public and also impressing upon the members of the medical profession the importance of this question and their duty in regard to it. Every physician ought to feel himself a friend and ally of the health department, and any regulation which may tend to lessen in any degree this feeling is unfortunate.

The problem of the public spitters is one which requires most careful thought and attention, and its solution will well repay the expenditure of any superfluous energy which the board of health may have to spare. If it could be shown that the registration of the phthisical would so affect public opinion, or in any way bring it about, that some effective steps could be taken to abate this nuisance, it would be a weightier argument than any yet presented. I can not see, however, that it would have such effect, beyond the fact that anything in the nature of a disease scare is an *argumentum ad hominem* which always gives a certain temporary advantage to the health authorities.

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* Read before the Society of the Alumni of the City (Charity) Hospital, February 10, 1897.

The second point to be considered is the acquiring by the health board of hospital facilities under its control for the treatment of consumption. In the letter previously mentioned, from Dr. Biggs to the writer, he says: "The inspectors of the health board have constantly come in contact with advanced cases of pulmonary tuberculosis in the poorest tenement-house districts, where patients were too poor, too ignorant, or too indifferent to exercise the simplest precaution, and who were exposing large numbers of other persons to infection by disregarding all instructions and refusing to go to a hospital, and the health board has been powerless to take any precaution. It is not possible for the health department to send such patients to hospitals that are not under its control, and the department has felt that it was not discharging its duty unless some measures were taken which would include the care of such patients."

If it is purely that, as part of its police functions, the board intends to acquire facilities for isolating such persons as willfully make themselves a danger to public health, I can not see any objection; but the moment they treat one voluntary patient—and certainly it is to be understood from their public statements that they propose to do this—we are confronted with the anomalous situation of two separate departments of the city government caring for the sufferers from this disease. It seems to me that the Charities Commissioners and the medical board of the City Hospital have under their control a plant which could, at comparatively slight expenditure, be made a model hospital for the treatment of the phthisical poor. Blackwell's Island has many natural advantages, and a modified pavilion plan would enable modern methods of treatment to be carried out in a very satisfactory manner for these advanced cases. Separate wards of the hospital itself could also be used if necessary without danger from infection. The location of the island makes it most accessible to the friends of patients, which is a great desideratum. I do not, of course, wish to be understood as recommending Blackwell's Island as a health resort for patients with incipient phthisis, though I am inclined to think that the introduction of advanced methods there would show surprising results. The Charities Commissioners do not seem to regard this question with much interest—probably not so much as they will later. This department has recently been deprived of its asylums by the State, and of its prisons and workhouses by separation from the Department of Correction. If the board of health once starts in to treat tuberculosis and other diseases of like degree of contagion, it requires no very vivid imagination to see the Charities Commissioners presiding over the almshouse alone.

It seems to me that the powers of the health department are already very diversified and almost paternal, and, as we can not always hope for a board like the present, would it not be good political judgment to preserve, as much as possible, the balance of power between the city departments?

In the communication to the board of health from Dr. Biggs and Dr. Prudden, upon which the subsequent action of the board was based, it was stated that "during the past twelve years there has been a reduction in the general mortality from all tuberculous disease of more than thirty per cent. in New York city." This statement is placed in such juxtaposition to the account of what has been done by the board during the past eight years relative to this disease as to convey the impression that the result is in fact due to that action. There has been, I believe, a gradual reduction in mortality from tuberculous disease during the last quarter century, and, as the real activity of the board in this direction has been manifest for about three years, it is evident that there have been other causes at work. Certainly the modern treatment of phthisis is full of interest and encouragement, and I can not but believe that it has also been an important factor in producing this result.

72 WEST FORTY-FIFTH STREET.

REPORT OF
SEVEN CASES OF OPHTHALMIA NEONATORUM.*

BY A. E. ADAMS, M. D.,
NEWBURGH, N. Y.

IN the month of August I treated and saw in consultation seven cases of ophthalmia neonatorum. I was able to follow the course of the disease to its termination in all but one case.

CASE I.—History: Age, eighteen days. Four days after birth the child had some discharge from its eyes; the attending nurse told the mother that "it did not amount to anything and would soon be all right."

When the child was sixteen days old (twelve days after the commencement of the discharge) the mother insisted on calling the family physician, who pronounced it a serious case, and declined to treat it without a consultation.

I was called, and found decided swelling of the lids, marked chemosis, and both corneæ cloudy. General condition good.

Treatment.—A trained nurse was secured and she was instructed to clean the eyes as often as pus accumulated between the lids. Boric-acid solution (ten grains to the ounce) to be used in cleansing the eyes.

When the pus and shreds of mucus were all removed, the eyeball and conjunctiva were completely smeared with bichloride vaseline (1 to 10,000).

Two days later the discharge was less, but an ulcer had appeared on the left cornea. Atropine was ordered. Four days after the first visit the ulcer was smaller, the child slept well, and took considerable nourishment.

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* Read before the Society of the Alumni of the City (Charity) Hospital, February 10, 1897.

The case continued to do very well, the ulcer improved, and the discharge diminished.

The family decided that they could take care of the child, and without consulting the family physician or myself discharged the nurse at the end of her first week.

When remonstrated with for the action they had taken, they said it was too expensive to keep a trained nurse.

Five days later the child was so much worse that I was again called to see it; the ulcer was considerably larger, and everything was going wrong.

To abbreviate the remaining history: After the family physician had reported the facts concerning the discharge of the nurse, I read the riot act to the family—the child was again placed in the care of a trained nurse, and for several days it was a serious question whether sight would be saved in one eye (the left).

Eventually the child recovered, and only a small opacity of the left cornea remains. A substantial victory for good nursing was won.

Case II.—History: Age, sixteen days. When the child was four days old the mother noticed a discharge from the right eye, and a little later the left eye was affected.

Although the lids were swollen and the discharge profuse, the nurse said she "had seen fifty such cases, and worse, and they all got well all right."

Some days later the family physician chanced to be in the house and his attention was called to the baby's eyes.

Recognizing the condition of the eyes and the gravity of the case, he immediately prepared, or had prepared, a solution of nitrate of silver, which he applied at once.

I saw the case in consultation and under the circumstances could not give a very favorable prognosis.

Here was a case of twelve days' standing—no treatment—actually neglected until the doctor happened to be in the house and discovered it.

Both corneæ were cloudy, and the right so much so that an ulcer seemed inevitable, and one did show distinctly at my next visit.

Treatment was practically the same as in Case I, with the addition of bichloride solution in the later stages.

The case improved, and only a small opacity remains on the right eye.

Case III.—History: Age, ten days. Noticed discharge from the eyes on the fourth day after birth.

I found the lids red and swollen, conjunctiva deeply injected; a profuse, thick, purulent discharge bathed the eyeballs, and when the lids were separated it welled up and ran over on the cheek.

Corneæ clear. General condition fair.

Treatment.—One application of nitrate of silver; cleansing of eyes every fifteen minutes; bichloride vaseline. Ice cloths on the lids.

Three days later discontinued ice cloths.

Fifth day, little or no discharge.

Seventh day, slight return of the discharge.

Ninth day, one application of nitrate of silver.

Eleventh day, discharge very little.

Fourteenth day, discharge slight.

I have not seen the child since, as it passed out of my care and into the hands of a "good old lady," who had "had a large experience with sore eyes in children."

A messenger sent to inquire about the child's eyes makes the statement that the child had been considerably worse since I saw it, but the family "thought that the corruption was all out now, and the child would soon recover."

Case IV.—History: Age, eleven weeks. Sore eyes for some weeks. Mother says that at first the discharge was thick and yellow, but later it became thin and watery. Lids a little puffy, conjunctivæ red, a scanty purulent secretion, ulceration of both corneæ with perforation to the anterior chamber of each eye; the aqueous evacuated, the corneæ collapsed, and partially attached to the iris and crystalline lens; a condition where there was no possibility of the patient ever regaining any sight more than to tell light from darkness, or at most to distinguish large objects. The general condition was very bad. The child was greatly emaciated, eyes sunken, skin pale and clammy, and it was suffering with a diarrhœa.

Treatment was directed to the general condition and the eyes kept clean.

Child died four days later.

Case V.—History: Age, ten days. Eyes have been discharging for three or four days; lids swollen; conjunctiva red and covered with patches of a semimembranous exudation, and the whole bathed in a thick purulent discharge of a deep yellow-green color; corneæ clear.

General condition good, except a decided jaundice.

Treatment was similar to Case I, except that I used bichloride solution instead of boric acid.

On the thirteenth day all discharge had ceased, and there has been no return of it.

With regard to the semimembranous exudation on the conjunctiva, the first thought was of diphtheria, but the child did not have diphtheria, and had not been exposed to it as far as I could learn; and another point against it was the patches being covered with the thick purulent discharge; if it had been diphtheria or croupous the secretion would have been scanty. I therefore classed it as ophthalmia neonatorum. Unfortunately, just at that time it was not convenient for me to get a satisfactory examination by an expert microscopist.

Case VI.—History: Age, seven weeks. Sore eyes since four days after birth. Lids thickened; conjunctiva red; central ulcer on each cornea, largest on the right.

General condition good.

Treatment.—In this case atropine was ordered because there was a possibility of the ulcer perforating to the anterior chamber, and if possible we wished to keep the iris away from the opening and avoid an anterior synechia.

Twenty-eight days later the discharge had all ceased (the ulcer did not perforate). There was a small opacity of the left cornea and a larger one on the right. They will both diminish in area and density, and eventually the child will have fairly good vision.

Case VII.—History: Age, four weeks. Mother says child's eyes have been sore since two days after birth (?). Conjunctiva injected; profuse purulent discharge; both corneæ hazy, and on the left is a small ulcer below the centre.

General condition good.

This case did unusually well until the child had an attack of cholera infantum.

I can not say that there was any more discharge, or that the eyes were any worse during this attack, but they certainly did not improve any for several days. Later the ulcer healed, the hazy corneæ cleared up, and the child has almost perfect vision.

In reporting these seven cases I do not claim that they are unique in any way—in fact, they are too common, and that is the reason I have taken the liberty of calling your attention to the subject.

In 1879–'80, while I was on the City Hospital staff, we first heard the reports that Neisser had discovered the gonococcus, and soon after Credé gave to the profession his treatment, or rather prophylactic treatment, for ophthalmia neonatorum.

Prior to that time 7.5 per cent. of all children born in his lying-in hospital had ophthalmia neonatorum. Since he adopted the "Créde method" the proportion is one half of one per cent., and I think these statistics would apply to all large lying-in hospitals.

I presume the younger members present will be able to report from their hospital service some wonderful statistics in this line; but it is not for hospitals that I am out gunning.

I am after the obstetrician who neglects to drop a solution of silver between the lids of all newborn infants where there is the least suspicion that the conjunctiva may have become infected.

I do not believe that a drop or two of a ten-grain solution of nitrate of silver does any permanent damage to the cornea of a newborn child, and I do not think any of you will criticise my statement when I say that a five-grain solution never does harm.

Why does any physician neglect this simple precaution when there is a possibility of infection?

Is it because the old grandmother or attending nurse does not always look with favor on this treatment?

Is it because the overworked physician does not have the time to spare?

I feel sure that every graduate of "Old Charity" does the right thing at the right time, and therefore these histories will be of no avail except to emphasize the need of constant watchfulness, and the necessity of a careful inquiry regarding what the unsophisticated call a "female weakness."

NOTE ON THREE CASES OF APPENDICITIS.

By J. S. WIGHT, M. D.,
PROFESSOR OF OPERATIVE AND CLINICAL SURGERY AT THE LONG ISLAND COLLEGE HOSPITAL, BROOKLYN, N. Y.

THE appendix is sometimes bent upon itself so as to occlude its lumen at the point of bending. The bend is usually quite sharp, and makes a pocket in the terminal portion of the appendix. The cause of this bending seems to be a contraction of the outer and lower portion of the meso-appendix. In the few cases which have come under my observation there has been more or less ptosis of the ascending and transverse portions of the colon. I can not say if the contraction is a cause or an accompaniment of the condition of the appendix. This condition is one of enlargement of the free end of the appendix. The pocket I have mentioned contains pus and fæcal matter, and the designation appendicular empyema might be used. At any rate, there is a terminal appendicitis of more or less gravity, as will be seen from the cases to be noted below.

CASE I.—Miss ——, about thirty years of age, had suffered for about ten days from recurrent appendicitis. The appendectomy was by means of the hypogastric incision. There was ptosis of the transverse colon and the ileum. The appendix was very large, being bent sharply upon itself, and it was also considerably twisted from right to left. The apex of the appendix was firmly adherent to the dislocated transverse colon. The bend in the appendix was between its middle and base, so that the appendicular swelling began at the bend and did not go quite to the apex. The basal portion of the appendix was quite completely occluded. After the removal of the appendix the expanded portion was cut open, disclosing pus and liquid fæcal matter. In this case the peritoneal cavity was liable to infection as soon as a rupture of the swollen appendix had taken place.

CASE II.—Mr. K., about forty-five years of age, had suffered from a painful spot in the region of the appendix for some time. He had to quit work from time to time. There was no swelling, and no induration complicated the case. The painful spot could be reached on deep pressure. The hypogastric incision for appendectomy was made. The caput coli was pushed well inward, and the appendix was drawn out from behind it. The appendix was sharply bent upon itself near the junction of the middle and terminal thirds. The terminal end of the appendix was enlarged and bulbous, and the proximal portion was occluded. After the appendectomy, the bulbous portion of the appendix was cut open, disclosing pus and liquid fæcal matter. In this case there was imminent danger of rupture, and then an infective peritonitis would have occurred.

CASE III.—Miss P., about thirty years of age, had a slight attack of pain in the region of the appendix. Some months subsequently she had another attack of considerable severity. The temperature was between 99° and 100°. The entire region of the caput coli was tympanitic. There seemed to be a little more than ordinary resistance between the spine of the ilium and the caput coli. The hypogastric incision was made. There was ptosis of the colon, which had a tendency to protrude. The adhesions were dissected up on the outer aspect of the caput coli, which was quite forcibly pushed inward, disclosing the appendix. The appendix was sharply folded upon itself, being occluded at the point of folding. After removal of the appendix, the distal portion of it was cut open; it contained pus and fæcal matter. The bent appendix had been kept in its abnormal form by the meso-appendix.

A REPORT OF SURGICAL CASES,

By J. O'CONOR, M. A., M. D., B. CH. (TRINITY COLLEGE, DUBLIN),
SENIOR MEDICAL OFFICER, BRITISH HOSPITAL, BUENOS AIRES.

RUPTURED MULTILOCULAR OVARIAN CYST; OPERATION; RECOVERY.—Mrs. C., aged fifty-one years, married, children, admitted into British Hospital on April 14, 1896, complaining of a swelling and dragging pain in left side of abdomen. This she had noticed for the past four months. She stated that before coming to the hospital she had consulted a doctor in a neighboring town; he inserted an exploring needle, found no fluid, and informed her that she was suffering from a movable left kidney. She also said the swelling sometimes disappeared.

Examination.—Patient was well nourished, of florid color. Tongue clean. Temperature and pulse normal. To the left of the umbilicus an undefined tumor was found, in umbilical and left lumbar regions, tender on palpation, and dull on percussion; no fluctuation elicited. On attempting to move the mass it suddenly disappeared, and did not return at that sitting.

Vaginal Examination.—There was a slight cystocele, also partial prolapse of uterus, with retroversion. Cavity measured two inches in length. No fullness in either broad ligament, or in Douglas's pouch. The ovaries could not be felt, owing to thickness of parietes, and the uterus was freely movable.

The menses had ceased a few years before, and there was no history of any uterine hæmorrhage or discharge. No difficult labors. She suffered from habitual constipation, and latterly had complained of a frequent desire to micturate. Liver, spleen, and urine normal. No family history of cancer.

On the following day she was again examined, but the tumor could not be felt. On percussion over its former site, only a very slight diminution in the normal tympanitic note could be heard. Although, on the previous day, I had not detected the colon in front of the tumor, I confess my diagnosis agreed with that of her own physician.

She was kept in bed, and daily examined, but no movable kidney was found. As the urinary trouble continued, it was thought probable that it was caused by cystocele and prolapsus uteri; and it was decided to open the abdominal cavity, and, if nothing else was found, to ventrofix the uterus.

On April 22d, assisted by my colleague, Dr. Lind Cruickshank, I made an incision, three inches in length, in the median line, midway between the umbilicus and the pubes.

On opening the peritonæum, a thin layer of colloid material was seen covering the intestines in all directions, and on the left side a collapsed mass was found; this was promptly extracted through the wound, and found to be a ruptured multilocular ovarian cyst, with a pedicle five inches in length and three inches in width. The latter was ligated with silk in three parts, and the tumor removed. The colloid substance was then removed in handfuls and by flushing with warm boric-acid lotion, and finally the toilet was completed with sponges. As the right ovary appeared cystic, it was removed, and the parietal wound was closed by three continuous silk sutures. No drainage provided.

The wound healed by first intention, and the skin suture was removed on the tenth day. Her convalescence was complicated by an occasional rise of evening temperature to 100° F., and she frequently complained of pain in the left iliac fossa. Along with this she had some post-operative cystitis. As there was no objective local symptom, and as the temperature had remained normal for ten days, she was discharged as cured on the thirty-fourth day.

A few weeks later I heard that the pains were yet giving trouble. About this period I had the opportunity of reading in the *Lancet* a most instructive paper by Mr. Lawson Tait *in re* the fate of pedicle ligatures. His diagrams haunted me when I thought of this case, but my mind was relieved on September 20th, when I received a visit from the patient's medical man, to kindly inform me that she had had no pains for two months and was in excellent health.

I forgot to mention that no trace of movable kidney was found at the operation.

The interesting points about this case are: The cause of rupture of the main cyst, the absence of any constitutional symptoms attending the same, the tolerance of the peritonæum to such a quantity of colloid material, and the length of the pedicle.

The disappearance of the tumor on palpation was doubtless due to the pressure of my hands having forced the fluid through the rupture into the peritoneal cavity.

The tumor weighed about eight pounds, fluid included. It was composed of one large cyst, in which an opening, half an inch in length, was found, and numerous small cysts, averaging of the size of a plum.

FOREIGN BODY IN THE MALE BLADDER; SUPRAPUBIC CYSTOTOMY; RECOVERY.—Mr. S., aged thirty-eight years, was admitted into the British Hospital on September 9, 1896. Four weeks ago he was walking with a friend, and they both found it necessary to stop and micturate against a wall. The friend, an observant character, noticed that patient's powers of expulsion were so feeble "that he could not hit the wall, and that the last few drops fell on his breeches"; consequently he assumed to himself the responsibility of diagnosticating stricture of the urethra, and confidingly informed the sufferer that he himself had had stricture, but cured it with an instrument which he would lend him. So eagerly was this kind offer availed of that on the same afternoon the patient returned to his friend's house, and took away with him the magical cure, an old, dirty, foul-smelling, No. 6 gum-elastic catheter. He went straight home and passed it into his bladder. He found it went in easily, and he felt so delighted at having such a free passage that in his ecstasy he forgot to look at the catheter after withdrawing it.

A few hours later he found it necessary to urinate. In the middle of it the flow stopped short, the most excruciating pain supervened, and after considerable straining ten millimetres of catheter was passed. This was followed by profuse hæmaturia.

During the night he had a rigor with "high fever." Next morning he sent for Dr. Welchli, who promptly asked permission to inspect the original instrument, and found that one third of it was missing. He prescribed rest, milk diet, and uva ursi.

On the following day another piece was passed, but the hæmaturia and cystitis continued for the ensuing four weeks. Frequently, on his micturating, the stream was suddenly cut off, and he said he "felt something inside doing it."

On September 10th chloroform was administered and a full-sized Liston's sound passed (not a trace of stricture or enlarged prostate), and something hard was felt grating against it in the bladder. Six ounces of warm boric-acid lotion were injected, and a medium-sized lithotrite was introduced. After a few futile attempts at seizing the foreign body, blood began to pour out from the urethra, and the lithotrite was withdrawn.

The bladder having been distended with twelve ounces of warm boric-acid lotion, an incision was made above the pubes, the bladder was opened extraperitoneally, and four pieces of phosphate-coated gum-elastic catheter were removed, measuring in all three inches. The bladder was irrigated with boric-acid lotion, the mucous membrane was united by a continuous catgut suture, the muscular coat was secured by a continuous Lembert, and at each end a supplementary Halsted was inserted. The external wound was closed in two layers, and a small opening left at the inferior angle, in which a small roll of iodoform gauze was placed. A soft catheter was passed *per urethram* and tied in, and the nurse was instructed to gently inject a tablespoonful of boric-acid lotion into the bladder every two hours. Ten grains of salol were ordered to be taken by the mouth every six hours.

The patient made an uneventful recovery; the vesical wound healed by first intention; not a drop of urine escaped through it. Excepting the complication of a slight urethritis and some gaping of the skin wound, there is nothing further to record. He was allowed out of bed on the eleventh day, and discharged cured a short time after.

I wish to thank my friends Dr. Shadbolt and Dr. Welchli for their kind assistance at the operation.

Chylous Cyst of the Mesentery; Operation; Recovery.—Mr. E. M. M., aged forty-one years, manager of a mercantile company, came to my consulting rooms on the 2d of September last, complaining of a tumor in the abdomen. The history was as follows: For the past two years he had had an inclination every morning to vomit, with a constant foul mouth and a bad smell from the breath, and he frequently had severe lancinating pains in the lower part of the abdomen. In June last, after riding ten miles, the pain was so bad that he had to remain in bed for three days.

In July he made a sea voyage, and suffered intensely from pain all the time, but he is not quite certain how much seasickness had to do with it.

During the month of August he had a good deal of business to transact in Buenos Aires, which required much walking about, and he suffered continually from pain, the morning tendency to vomit and foul breath continuing as before.

One day, at the end of August, after jumping from a street-car, he experienced the most excruciating agony. On the following morning he was unable to get out of bed, and for the first time noticed a "lump" below and to the right of the navel.

A doctor was called in, and later that same day a consultation was held. He was told he had a tumor, was placed on low diet, was kept in bed, and had free purgation.

On the following day his doctor told him he had a "hydatid tumor" which would require operation.

Examination, on September 2d.—A distinct swelling was visible in the median line between the umbilicus and the pubes. On palpation, a well-defined, tense, fluctuating tumor was felt, even in contour, movable, and of about the size of an ordinary cocoanut.

I particularly noticed that palpation caused severe pain—so much that I had to desist from finding its actual range of movement. There was absolute dullness on percussion; no thrill obtained. Tongue furred, breath foul, temperature and urine normal; other organs healthy. There was nothing to record in his past history excepting habitual constipation and an occasional attack of "asthma." Family history excellent.

I informed him that he undoubtedly had a tumor, but what the exact nature of it was I could not say, but that I felt pretty certain it contained liquid. I advised him to enter the hospital, in order that I might make an exploratory incision. This he did on September 7th.

On the following morning, the bladder having been emptied, chloroform was administered, and when the dressings were removed we found that the tumor moved freely in all directions. Assisted by my colleague, Dr. Shadbolt, I made a three-inch incision in the median line directly over the tumor, and opened the abdominal cavity. It was immediately seen that the cyst wall differed from that of a hydatid in that it had a dirty-gray appearance, and many large veins ramified over its surface (it looked like a sarcoma). The tumor was lifted out of the peritoneal cavity, along with the mesentery in which it grew, and some four inches of adherent small intestine. A careful examination was made to see if it was feasible to enucleate it, but, as it was so very adherent between the layers of the mesentery, and as so many vessels would require ligation, it was decided to drain it. A medium-sized trocar was inserted and half a pint of milky fluid withdrawn. The opening made by the trocar was enlarged and the anterior half of the circumference clipped away with scissors. Many large veins having been tied, the whole mass was returned into the abdominal cavity, and the cut edges of the cyst were united to the parietal wound by a continuous silk suture. The remainder of the superficial wound was closed by the continuous silk sutures and the cavity of the cyst stuffed with iodoform gauze.

For the following forty-eight hours vomiting was incessant, but ceased on the third day. The highest post-operative temperature recorded was 99.5°. The bowels were moved on the fifth day, and by the 14th the cavity had contracted flush with parietal wound. The pain, tendency to vomit, and foul breath completely disappeared, and he was discharged cured two weeks later. He said he had not felt so well for two or three years.

Dr. Welchli kindly made a microscopic examination of the fluid, and reported that it was ordinary chyle.

On referring to Mr. Treves's treatise in his own *System of Surgery,* I find he states that there have been only nineteen cases of mesenteric cyst recorded, twelve of which were cured by operation and seven proved fatal. The situation and mobility of this tumor exactly corresponded with this gentleman's teaching, but he says they are usually painless. In this case pain was one of the earliest symptoms, and the most distressing one.

Acute Suppurative Amygdalitis; Laryngotomy; Recovery.—Mr. Z., aged thirty-six years, came to my consulting rooms on the 10th of September last. He stated that he felt some soreness in his throat, had some difficulty in swallowing, and had passed a very restless night.

Examination.—Temperature, 100°; tongue furred; foul-smelling breath; the left tonsil was swollen, of a deep-red color, but no patches or ulceration visible. Quinsy was diagnosticated, and he was advised to go home, which, unfortunately, he was unable to do, owing to pressing business. A gargle of weak sulphurous-acid lotion was ordered to be used every two hours, hot linseed poultices to the neck when he got home, and an ounce of magnesium sulphate to be taken immediately.

September 11th.—He called again to see me; he felt worse, and complained of shooting pain in the left ear and some stiffness on opening his mouth. Temperature, 101°. Left tonsil more swollen and inflamed; soft palate and uvula also swollen. On digital examination no fluctuation could be detected. Again he was ordered to drop work, but did not do so. Treatment continued.

12th.—He paid another visit; had a very haggard appearance; stated he had not slept a wink during the night, and that he could no longer work. Temperature, 102°. Tonsil and soft palate more swollen, and the inflamed uvula was pushed over to the right side. No patches or sore visible. Digital examination was again made, but no fluctuation was detected. The glands were swollen below and behind the jaw, and he could barely open his mouth. He was advised to go to the hospital, which he did on the following morning.

I saw him there on the 13th, and along with the resident medical officer made a very careful examination. All the symptoms were intensified; he could only swallow sips of water. As the gargle caused a choking sensation, it was dispensed with. Steam inhalations were ordered to be given every two hours, leeches to be applied over the cervical swelling, and hot strips to be constantly laid upon neck.

On the 14th, as he did not feel relieved, I had a consultation with my colleagues, Dr. Shadbolt and Dr. Halahan, and, as they agreed to the diagnosis of quinsy, I incised the soft palate at its most bulging spot. Nothing but blood escaped. Another incision was made quite close to the last molar tooth, and a teaspoonful of pus was evacuated. He was then ordered to wash out his mouth and, if possible, his pharynx every half hour with warm water, and the other treatment was vigorously continued.

The urine was examined and was found normal; not a trace of albumin.

I visited him again at 5 P. M., and was disappointed at not finding him better. The throat was examined, and the opening into the abscess cavity was found closed; immediately it was reopened with a probe, and a little more than a teaspoonful of greenish pus evacuated. He complained that for the past few hours he had found some difficulty in breathing.

At 7 P. M. Dr. Halahan was called to see him, and he found the dyspnœa had greatly increased. He very properly introduced a mouth gag, removed a portion of the swollen tonsil with a guillotine, and scarified the soft palate in four different places. No pus was encountered. The abscess cavity was empty; the opening into it quite patent.

At 10.30 P. M. I was telephoned for, and on arrival found the patient sitting up in bed, and he whispered that he could not breathe lying down. With a strong light and the help of a mouth gag I had a good look at the affected parts. Not a vestige of a white patch or any kind of ulceration was visible. As the part seemed as swollen as ever, notwithstanding six free incisions and a partial amygdalotomy, I determined to make another trial. Three more incisions were made, but again no pus was found. After this the parts looked one swollen mass of cuts. I carefully palpated the cervical swelling (which had not increased in size), but could not find a fluctuating or boggy spot.

I determined to stay all night in the hospital, for it was evident that there was some œdema of the glottis.

At 3.30 A. M. I was hurriedly roused and found the patient gasping for breath, and, as the lips were blue and abdominal muscles retracting, there was no use in prolonging the agony any further. He was at once brought to the operating theatre; he jumped on to the table and placed his head over the end of it as directed. I made an inch incision through the skin, deliberately separated the tissues with a blunt dissector, seized the larynx with a sharp hook, opened it, and inserted a large-sized tracheotomy tube. A hot sponge was placed over it. The patient sat up on the table, held his sponge in position, jumped into the chair, was brought back to his ward, and despised any assistance in getting into bed. Ten minutes later I saw him: he was smiling, and in his face was depicted relief. He swallowed some water at midday and an eggnog at 4 P. M., and had two glasses of milk during the following night.

16th.—He felt much better, and at 6.30 P. M. the tracheotomy tube was removed. On my closing the wound with a plug of gauze he could breathe quite normally *via* pharynx.

20th.—He had some fish for breakfast and fowl for dinner. The inflammation and swelling of the tonsil, soft palate, and uvula had completely disappeared without a trace of pus formation.

24th.—Wound in larynx had closed. He was allowed out of bed on the 26th, and was discharged cured on October 2d.

I forgot to mention that his previous history was very good. Occasionally, if he caught cold, he suffered from a husky throat. He "never had a serious disease, and was a healthy child." At times he goes in for boating, and is a strong, muscular man, and for braving a laryngotomy, lasting four minutes, I have never met with such determined courage.

I suppose œdema of the glottis, supervening in quinsy and calling for laryngotomy, must be rare, for I can not find any mention of such a case in Fagge, Roberts, Watson, Taylor, Treves, or Erichsen.

I wish to express my best thanks to Dr. Halahan and nurse Kissock for their very great care in this most troublesome case.

Therapeutical Notes.

Carbolic Acid in the Treatment of Itching.—According to Dr. Brocq (*Gazette hebdomadaire de médecine et de chirurgie*, March 7, 1897), if there is abnormal dryness of the skin, the part should be lathered with soap, washed with warm chamomile tea (made with ten flower-heads to the quart), and dried with absorbent cotton. Then the following ointment may be applied:

℞ Carbolic acid	4½ to 6 grains;
Lanolin, Olive oil, } each	225 "

The part should be dusted carefully with powdered starch or a mixture of powdered talc and dermatol.

If the itching accompanies an eruption, the following ointment is to be preferred:

℞ Zinc oxide	2 drachms;
Carbolic acid	4½ to 6 grains;
Salicylic acid	10 "
Lanolin	3 drachms;
Vaseline	1 ounce.

M.

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THE BALTIMORE CASES OF RABIES.

The distressing fact that four out of eight boys who were bitten by a mad dog in Baltimore on December 1st, and all promptly treated at the New York Pasteur Institute, died of rabies within a few weeks—one of them on December 21st, two on December 26th, and one on January 5th—is calculated to impair our confidence in the efficiency of the Pasteur treatment. In an editorial article entitled Patients Dead of Hydrophobia after the Treatment during the Year 1896, published in the *Bulletin of the Pasteur Institute*, the following accounts are given of the cases of the four boys that died:

"The four following patients, coming from Baltimore, Md., were bitten on December 1st, in the same hour and by the same dog as four other children who are still living. Hydrophobia was recognized in the dog, a large St. Bernard, by a positive inoculation made on three rabbits at the College of Physicians and Surgeons of Baltimore.

"Robert Perry, aged sixteen years; bitten on December 1st, seven abrasions and one deep cut on the right cheek, another deep cut on the neck. Bled abundantly; cauterized with nitrate of silver (insufficient) ten minutes later. Came for treatment on December 4th, was discharged on December 18th, and died on December 27th, nine days after.

"Lawrence E. Wilson, aged eleven years; bitten on December 1st, under the left eye, on the right eyebrow, where it was necessary to put three stitches, and the right cheek. Bled abundantly; no cauterization was made. Patient came for treatment on December 3d, discharged on December 17th, was take ill on January 1st, and died on January 4th.

"Robert Henry, aged eight years; bitten on the 1st of December, deeply on the nose, the upper lip, and the right cheek; his wounds bled abundantly, and no cauterization was made. He was treated from December 4th to December 18th. He died on December 21st.

"Conrad Eppers, aged fifteen years; bitten on the nape of the neck and on the left forearm. His wounds, which bled freely, were not cauterized. Was treated from 3d to 17th of December; died on December 25th."

It will be noticed that there is some discrepancy between the opening sentence of our article and the *Bulletin's* article as to the dates on which the deaths occurred, but it is trifling in degree. Our own account, so far as concerns three of the four boys, is founded on information kindly sent to us by a Baltimore physician, and, so far as concerns the other boy, on a letter written by his mother and published in the *Baltimore News* for March 17th.

Commenting on these four deaths and another one, the writer of the *Bulletin's* article says: "These five deaths occurring in the two hundred and forty-one cases treated during the year 1896, make a death-rate of 2.08 per cent. But, if in accordance with the practice which has been adopted in Europe, we consider that, when the treatment has been administered, fifteen days more are required for establishing immunity, we see that not one of the above-reported deaths can be accounted as a failure of the Pasteur treatment, inasmuch as in every case, the symptoms of the disease made their appearance less than fifteen days after the patient had left the institute. Another remark must also be made on the severity of the location of the bites. With the exception of Stephen Carey [who was not one of the Baltimore boys], all the patients were bitten on the face, the neck, or the head. Their wounds were multiple, bled more or less, and received no immediate attention. All of them were boys from eight to sixteen; it is a well-known fact that the absorption of viruses takes place quicker in the young, especially when they have been bitten on the region of the hea[illegible] The patients were brought to the institute three, four, or eight [in the case of young Carey] days after the bite. It must be understood that, after a suspicious bite, and especially if the latter was inflicted on the head, the treatment should be applied as soon as possible, and that there is danger in procrastinating. The above cases must consequently be omitted from the list of the patients treated, and the statistics recorded read as follows:

"Patients treated at the New York Pasteur Institute during the year 1896........ 236.

"Number of deaths notwithstanding treatment .... 0."

We think the profession would like to know the reason for the European practice of throwing out from the statistics the cases of patients who have died of rabies within fifteen days of the termination of the Pasteur treatment. It seems very much like saying that patients on whom the treatment has been tried in vain have not been subjected to it at all. From all points of view, it seems to us better to acknowledge openly that the treatment fails in some cases, endeavor to find out the causes of its failure, and then try to do away with those causes. Another point on which the profession would like to have precise information is this: How soon must a person who has been bitten by a rabid animal be subjected to the Pasteur treatment for it to exert the degree of protection which its practitioners generally expect of it? As regards the Baltimore cases, the last of the eight boys that were bitten on December 1st was in the Pasteur institute on December 4th.

GIVE THE "CITY HOSPITAL" ITS OLD NAME BACK AGAIN.

A NUMBER of years ago the cumbrous name of Blackwell's Island Hospital designated an institution that was then, as it is now, a prominent feature in East River scenery, an imposing-looking building, rather unsavory within, but altogether handsome without. Even in those days the students of the city medical colleges flocked to it for clinical instruction, but there were only a few of the members of its staff of physicians and surgeons who found their service satisfactory. The administration was thought to be lax, and the food, medicine, and appliances were inadequate.

But there came a change, a sort of reconstruction of its affairs that worked great improvements, and the institution had the new name of Charity Hospital bestowed upon it. Under this name it rose in favor with the profession. Young graduates of the best equipment were very ready to serve on its house staff. This improvement proved to be permanent, and the repute of the hospital grew into prestige. After a time it came to be a matter of pride with the young men that they had served in Charity Hospital, and a society of its alumni was formed. This organization has prospered and done good work, as the readers of this journal need not be told. Naturally, those of its members who served in the hospital before its name was changed, not long ago, to that of the City Hospital do not relish the change. The loss of prestige that comes from the substitution may readily be understood to work a real injury to them. Moreover, there is no distinctiveness in the name City Hospital. Bellevue Hospital is a city hospital also, and the same may be said of a number of other hospitals in the city. There is therefore no sense in retaining it.

On the other hand, the commissioners of public charities seem to have imbibed the notion that the word charity is galling to the poor people who are obliged to resort to the hospital for treatment. We think this is a mistake. It would be strange indeed if the poor of New York were more sensitive on this score than the same class of people in other cities. Does the name La Charité or La Pitié add a pang to the feelings of a poor Parisian who is taken to one of those hospitals? Has any such thing been observed in the case of the Charity Hospital in New Orleans or the Mercy Hospital in Chicago? The notion is an inheritance which our present commissioners of public charities would do well to cast off, and we hope Mr. Faure will be strengthened to labor to that end by what was said at the February meeting of the Society of the Alumni of the City (Charity) Hospital, which we print in this issue of the *Journal*.

MINOR PARAGRAPHS.

REMUNERATION FOR REPORTS TO HEALTH BOARDS.

IT is announced that at last the State of New York has a law requiring municipalities to pay physicians and midwives for reporting births, and clergymen and magistrates for reporting marriages, to local boards of health. The remuneration is not to be large, only twenty-five cents for each return, but the principle is the thing to be considered. We can see no reason why physicians should not be paid for making out death certificates also.

THE MARINE-HOSPITAL SERVICE.

THE *Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the Fiscal Year 1896*, which has recently been issued, is an unusually portly volume of the series, comprising 1079 pages of closely printed matter and numerous maps and pictorial illustrations. The contributed articles are as follows: Cases in Hospital Practice (service of Surgeon H. W. Austin), reported by Dr. W. M. Burwell, interne of the hospital in Boston; A Notable Overgrowth of Connective Tissue after Urethrotomy, Associated with Keloid of the Cicatrix after Cœliotomy, Gynæcology in the Service, and The Radical Operation for the Cure of Inguinal Hernia, by Passed Assistant Surgeon Eugene Wasdin; A Case of Appendicitis, by Passed Assistant Surgeon P. M. Carrington; A *Résumé* of the Surgery during the Past Two Years at the Port of Cleveland, Ohio, by Passed Assistant Surgeon R. M. Woodward; Selected Cases from a Year's Surgical Work in Philadelphia, by Passed Assistant Surgeon George Tully Vaughan; A Statistical Study of Perforation of the Intestines in Enteric Fever, with a Report of a Case of Perforation of the Cæcum, by Passed Assistant Surgeon J. C. Perry; A Case of Leprosy of Norwegian Origin, by Assistant Surgeon J. M. Eager; Bubo and its Treatment, by Assistant Surgeon C. E. Decker; Femoral Aneurysm immediately under Poupart's Ligament—Ligature of the External Iliac Artery—Recovery, Simple Comminuted Fracture of the Left Patella—Operation—Recovery, Abscess of the Bursa of the Right Elbow with Involvement of the Joint—Recovery, and Gangrene of the Right Leg—Ligation of the Right External Iliac Artery—Amputation at the Right Hip Joint—Recovery, by Assistant Surgeon J. H. Oakley; and Prophylactic Inoculations of Hydrophobia at the Odessa Bacteriological Station during the Year 1894, by Mr. Thomas E. Heenan, United States consul at Odessa. There are also historical sketches of the Marine Hospitals at Detroit (by Surgeon W. H. H. Hutton), Boston (by Surgeon

H. W. Austin), San Francisco (by Surgeon John Godfrey), Vineyard Haven (by Passed Assistant Surgeon D. A. Carmichael), Evansville (by Passed Assistant Surgeon P. M. Carrington), Louisville (by Passed Assistant Surgeon W. P. McIntosh), and Cleveland (by Passed Assistant Surgeon R. M. Woodward). The statistical reports are ample and minute. It is abundantly evident from the volume that the service is in a high state of efficiency.

THE ANTITOXIC POWER OF THE THYREOID GLAND.

Dr. de Luca and Dr. D'Angerio (*Rivista medica e terapeutica*, 1896, No. 9; *Centralblatt für chirurgie*, March 13, 1897), in order to study the question of whether it is the function of the thyreoid gland to destroy poisonous material circulating in the blood, have tested the toxicity of the urine of dogs before and after removal of the gland, on the supposition that that would serve as an index of the amount of toxic matter circulating in the blood. In the estimation they employed Bouchard's method. They have come to the following conclusions: After removal of the thyreoid gland the urine contains a greater percentage of poisonous matter than that of healthy animals does; the urotoxic coefficient begins to rise gradually even before the nervous symptoms attributable to the operation set in, and reaches its maximum coincidently with their appearance; animals that are kept without food also show an increased toxicity of the urine, but not so great an increase as is caused by the operation; the administration of thyreoid juice is capable of first moderating the increment of urinary toxicity and then reducing the toxicity; accordingly, in the organism of a dog that has been deprived of the thyreoid gland there are toxic materials in excess, and thyreoid-gland juice serves to neutralize them.

A COSMETIC FORM OF LAPAROTOMY.

In order to spare patients an unpleasant scar, Dr. O. Küstner, of Breslau (*Monatsshrift für Geburtshilfe und Gynakologie; Centralblatt für Gynäkologie*, March 13, 1897), has devised the method of making a transverse incision through the skin and subcutaneous fat following a course coincident with a natural fold of the skin, more or less distinct, that occurs at about the upper limit of the growth of pubic hair in women. This superficial incision is held well open with retractors, and the structures through which it has been made are dissected up from the muscular layer upward and downward to a sufficient distance to admit of the ordinary median incision through the deep portion of the abdominal wall. In addition to the deep sutures, the transverse incision is sutured with silkworm gut and, if primary union takes place, the linear cicatrix is rendered almost invisible by the pubic hairs and by the fact of its coincidence with the natural fold mentioned.

ITEMS.

The Nouvelle iconographie de la Salpetriere.—The first issue for 1897 of this publication, which enters upon the tenth year of its existence, has been received, and an examination of this number shows that in the hands of MM. Masson & Co., its new publishers, this interesting periodical can not but gain in quality. The first number contains not fewer than eighteen illustrations in the text and nine plates. One of them is colored, six are phototypes, and two are photogravures. Among the original communications are the following: A Case of Traumatic Hemisection of the Medulla, by Professor Raymond; The Relation of Standing with the Weight on One Foot to the Primitive Scoliosis of Adolescents, by Dr. Paul Richer; A Study on Amelia, by M. Henri Meunier; A Case of Hemimelia in the Son of a Syphilitic, by M. G. Gasne; and Medical Applications by Means of the Röntgen Method, including the Description of a New Mercury Interrupter for Induction Bobbins, and a Study of the Extremities of a Six-fingered Person, with Five Röntgen Pictures, by M. A. Londe and M. Henry Meige.

A great deal of attention has been given to the artistic portion of the journal. M. Henry Meige continues his series of studies on medical pictures, with a history of the pedicures of the seventeenth century according to the description of the Flemish and Dutch schools. This article is accompanied by three plates representing pictures of David Téniers and Adrien Brouwer.

Under the direction of the successors of Professor Charcot, the illustrious founder of the journal, and with the collaboration of the most qualified representatives of science both in France and abroad, its success can not but be assured in the future, for it appeals not only to physicians and surgeons, but to artists, to historians, to scholars, and to critics—in fact, to all those who are interested in science and art in all their branches.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 30, 1897:

DISEASES.	Week ending Mar. 23.		Week ending Mar. 30.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	1	8	1
Scarlet fever	215	7	195	5
Cerebro-spinal meningitis	2	3	5	3
Measles	176	9	197	7
Diphtheria	221	34	244	35
Croup	15	4	13	7
Tuberculosis	143	96	214	119

The Late Dr. William Bogardus Berry.—At a meeting of the Orange Mountain Medical Society, held on March 19, 1897, the following report was adopted:

Report of a committee appointed at the February, 1897, meeting of the Orange Mountain Medical Society to prepare a suitable minute on the death of William Bogardus Berry, M. D.

Whereas, This society has been informed that Dr. Willian Bogardus Berry died in Pasadena, California, in December, 1896, and

Whereas, He was one of the founders of this society and for a number of years did his full share to promote its scientific advancement and social well-being; therefore be it

Resolved, That it is with profound sorrow that we have learned of the untimely death of our late associate, and that we desire, as a slight tribute to his memory, to have it recorded that we have never known a purer nor a more sincere man; and that his professional equipment and his private character were such that his membership cast lustre upon this society.

Resolved, further, That in his death the profession has lost a faithful and accomplished practitioner; his family a wise and devoted husband and father; the community a good citizen; the poor and unfortunate a ready helper; and the members of this society a genial companion and a noble and high-minded friend.

Resolved, further, That these resolutions be inscribed upon our minutes and that copies of them be sent to Dr. Berry's family, to the *Journal of the American Medical Association*, to the New York *Medical Record*, and to the *New York Medical Journal*.

John J. H. Love,
[Signed.] Richard C. Newton, } *Committee.*
Thomas W. Harvey,

A Statue of the Late Professor Samuel D. Gross is to be unveiled in Washington, near the Army Medical Museum, on Wednesday, May 5th, at five o'clock in the afternoon, under the auspices of the American Surgical Association and the Alumni Association of the Jefferson Medical College, of Philadelphia.

The License to Practise in Louisiana.—An esteemed correspondent informs us that Louisiana now has a State board of medical examiners.

The Columbus Medical Journal.—The office of the journal is now at No. 68 Buttles Avenue.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 21 to March 27, 1897:*

JARVIS, NATHAN S., Captain and Assistant Surgeon, is relieved from duty at Willets Point, N. Y., to take effect upon the expiration of his present leave of absence, and ordered to Fort Clark, Texas, for duty.

KILBOURNE, HENRY S., Major and Surgeon, will be relieved from duty at Fort Clark, Texas, upon the arrival of Captain Jarvis at that post, and ordered to Madison Barracks, New York, for duty.

SWIFT, EUGENE L., Captain and Assistant Surgeon. The extension of leave of absence granted him on surgeon's certificate of disability is still further extended one month on surgeon's certificate of disability.

WILLCOX, CHARLES, Captain and Assistant Surgeon, is relieved from duty at West Point, N. Y., to take effect upon the expiration of his present leave of absence, and ordered to Fort Bliss, Texas, for duty at that post, relieving RAFFERTY, OGDEN, Captain and Assistant Surgeon. Captain Rafferty, on being thus relieved, is ordered to Willets Point, N. Y., for duty at that post.

WINTER, FRANCIS A., First Lieutenant and Assistant Surgeon, is ordered to West Point, N. Y., upon completion of his examination for promotion, to report to the Superintendent, U. S. Military Academy, for duty at that post.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending March 27, 1897:*

CARPENTER, D. N., Assistant Surgeon. Detached from the U. S. Steamer Franklin and ordered to the U. S. Steamer Raleigh.

COSTIGAN, G. D., Assistant Surgeon. Detached from the Naval Laboratory and Department of Instruction and ordered to the U. S. Steamer Vermont.

CRAIG, T. C., Surgeon. Placed on the retired list from March 12th.

DICKSON, S. H., Surgeon. Detached from the U. S. Steamer Texas and ordered to the U. S. Steamer Massachusetts.

DIEHL, OLIVER, Surgeon. Detached from the Philadelphia Naval Hospital, April 5th, and ordered to the U. S. Steamer Terror. April 6th.

DU BOSE, W. R., Surgeon. Detached from the U. S. Steamer Terror, April 6th, and ordered to the U. S. Steamer Texas.

KENNEDY, R. M., Passed Assistant Surgeon. Detached from the Norfolk Naval Hospital, April 3d, and ordered to the Philadelphia Naval Hospital.

SIEGFRIED, C. A., Surgeon. Detached from the U. S. Steamer Massachusetts and ordered to the Torpedo Station.

Marine-Hospital Service.—*Official List of the Changes, of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen Days, ended March 15, 1897:*

MURRAY, R. D., Surgeon. Granted leave of absence for one day. March 17, 1897.

GEDDINGS, H. D., Passed Assistant Surgeon. Upon adjournment of Sanitary Conference at Venice, Italy, to proceed to Marseilles, France, for special temporary duty. March 10. 1897.

WERTENBAKER, C. P., Passed Assistant Surgeon. Granted leave of absence for seven days from March 13, 1897.

Promotions.

GARDNER, C. H., and BLUE, RUPERT, Assistant Surgeons, commissioned as Passed Assistant Surgeons. March 3, 1897.

Society Meetings for the Coming Week:

MONDAY, *April 5th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York: Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Philadelphia Academy of Surgery; Boston Society for Medical Observation; Boston Society for Medical Improvement; St. Albans, Vermont, Medical Association (annual); Providence, Rhode Island, Medical Association; Hartford, Connecticut, Medical Society; South Pittsburgh, Pennsylvania, Medical Society; Chicago Medical Society (annual).

TUESDAY, *April 6th:* Medical Association of the District of Columbia (Washington); Tri-State Medical Society of Iowa, Illinois, and Missouri (first day—St. Louis); New York Neurological Society; New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Broome (quarterly) and Niagara (quarterly—Lockport), N. Y.; College of Physicians of Philadelphia (Section in Otology and Laryngology); Hudson (Jersey City), Essex (annual—Newark), and Union (annual—Elizabeth), N. J., County Medical Societies; Androscoggin, Maine, County Medical Association (Lewiston); Chittenden, Vermont, County Medical Society; Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *April 7th:* Tri-State Medical Society of Iowa, Illinois, and Missouri (second day); New York Academy of Medicine (Section in Public Health); Harlem Medical Association of the City of New York; Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; College of Physicians of Philadelphia; Penobscot, Maine, County Medical Society (Bangor); Bridgeport, Connecticut, Medical Association.

THURSDAY, *April 8th:* Tri-State Medical Society of Iowa, Illinois, and Missouri (third day); Medical Association of Montana (Helena); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Massachusetts, Medical Society (private); Pathological Society of Philadelphia.

FRIDAY, *April 9th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.; College of Physicians of Philadelphia (Section in General Surgery); Northern Medical Association of Philadelphia.

SATURDAY, *April 10th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Married.

CHALMERS—RANO.—In Buffalo, on Thursday, February 4th, Dr. John Chalmers and Miss Susie Rano.

DILLEHAY—CARRADINE.—In New Orleans, on Thursday, March 25th, Dr. D. William Dillehay and Mrs. Emma Carradine.

HUEY—LOWE.—In Hazlehurst, Mississippi, on Thursday, March 25th, Dr. T. Huey and Miss Blanche Lowe.

MORD—MOSS.—In New York, on Tuesday, March 30th, Dr. George Mord, of Clifton, N. Y., and Miss Nettie Moss.

SITMAN—BROWN.—In Baton Rouge, Louisiana, on Wednesday, March 17th, Dr. G. W. Sitman, of Manchac, Louisiana, and Miss Esther D. Brown.

Died.

BARTLETT.—In Buffalo, on Wednesday, March 17th, Dr. Frederic William Bartlett, aged seventy-one years.

BRONSON.—In Rhinebeck, N. Y., on Sunday, March 28th, Dr. John O. Bronson, aged seventy years.

CLARKE.—In Niagara Falls, N. Y., on Monday, March 22d, Dr. Gardner Carpenter Clarke, aged fifty-six years.

DAGENAIS.—In Buffalo, on Thursday, March 4th, Dr. Alphonse Dagenais, aged fifty years.

Letters to the Editor.

TUBERCULOSIS AND THE BOARD OF HEALTH.

349 WEST FIFTY-EIGHTH STREET, NEW YORK, *March 21, 1897.*

To the Editor of the New York Medical Journal:

SIR: Will you allow a constant reader of your esteemed paper the privilege of contributing a few lines on one of the vital issues of the day? In asking this privilege I would say that I have made, I believe, a careful study of pulmonary tuberculosis in its sanitary aspect for a number of years in this country and abroad.

I have been watching with the most profound interest the controversy now going on between the board of health and the medical profession at large regarding the question of tuberculosis. I have refrained from again expressing an opinion on the subject, for I had defined the position I take in this matter before the Academy of Medicine on the very evening Dr. Biggs spoke in justification of the action of the board of health, and Dr. Hance described his investigations regarding the infectious nature of dust taken from the rooms of consumptives living in tenement houses.

In all the declarations on the part of individuals or societies thus far published in the New York medical papers concerning the subject under discussion, I have not up to yesterday found one which was in contradiction to the views I expressed. But when a body of medical men representing an important scientific institution (West Side German Dispensary) to which is attached a medical school for post-graduates (New York School of Clinical Medicine) comes out with statements such as were published yesterday in two of the leading medical papers of this country (*New York Medical Journal* and *Medical Record*) I think it is time to make a protest; not in the interest of the New York or any other city board of health, but in the interest of science, medical honor, and true humanity, the very things which the medical board of the West Side German Dispensary feels called upon to defend against the intentions of the board of health.

Here is what can be read in their preamble:

"*Whereas*, On January 11, 1897, representations were submitted to the health commissioners of New York by two officials in the health department which are inaccurate and misleading in several important particulars, and call for an unnecessary and dangerous extension of the powers of the health department, as follows:

"1. That the statement embodied in the first paragraph of the report—namely, 'that it is now the universal conviction that tuberculosis is a communicable disease,' is not entirely correct and is not the opinion of many distinguished clinicians."

I fail to see what is the application of the words "not entirely correct." Is there a pulmonary tuberculosis without tubercles and bacilli? Are the experiments of Villemin,[*] Weber,[†] Koch,[‡] Tappeiner,[#] Cornet,[‖] Krueger,[△] Grancher,[◊] Straus,[‡] Prudden and Hodenpyl,[↕] and many others worth nothing? Have not these men, the highest authorities on the subject, demonstrated beyond a doubt that the tuberculous expectoration, dried and pulverized, floating in the air is the most potent factor in the propagation of the disease, and that pulmonary tuberculosis is a communicable disease *par excellence?*

I ask the gentlemen who passed those resolutions if they would be willing to expose themselves or their relatives to the inhalation of dried particles of tuberculous dust, or if they would be willing to live with a consumptive individual of whose scrupulous and conscientious cleanliness in regard to his expectoration and other secretions they were not thoroughly convinced?

To make statements such as are contained in the above-mentioned preamble is certainly a very dangerous thing for a large and influential body of medical men who have under their care at their free dispensary, no doubt, a large number of tuberculous patients still able to walk about, and each one expectorating daily his millions of bacilli, sometimes into a vessel, and sometimes wherever he pleases, since his doctor has declared that it is not the universal opinion that his disease is communicable.

What is written in the medical papers may often be repeated by the daily press. The mind of the public has happily been educated to a certain degree to the danger arising from carelessly expectorating consumptives, and we should all willingly and gladly recognize the efficient service done in this direction by the present board of health. If the same public, just beginning to realize how necessary it is to be careful when living with a consumptive, or when afflicted with the disease, should read that the statements previously made to that effect were not entirely correct, all that has been laboriously accomplished in voluntary and public prophylaxis may be suddenly lost, only to be regained after great struggles on the part of the sanitary authorities.

To show that I do not agree with the further statement of the medical board of the West Side German Dispensary that there is no need of special hospitals for consumptives, I will merely repeat what I said on the evening when I had the honor to address the academy, that the prophylactic, hygienic, and dietetic treatment of consumptives can be carried out successfully by any physician in private practice, provided his patient is willing, obedient, and socially so situated as to have the comforts and surroundings which the treatment demands. I pleaded for municipal sanatoriums for poor consumptives, and believe I demonstrated their need beyond a doubt. Judging from a considerable experience among this class of patients in large cities, I believe I do not exaggerate when I say that I think them the most unfortunate of the unfortunate, and as long as they live in densely crowded tenement houses they not only reinfect themselves constantly but form veritable centres of infection for others.

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[*] Villemin. De la prophylaxie de la phtisie pulmonaire. *Union médicale*, 1868, p. 150.

[†] Weber. On the Communicability of Consumption from Husband to Wife. *Clinical Society's Transactions*, 1874, t. 7, p. 144.

[‡] Koch. Die Aetiologie der Tuberkulose. *Mittheil. a. d. k. Gesundheitsamte*, Bd. ii, 1884, p. 79.

[#] Tappeiner. Ueber eine Methode Tuberkulose zu erzeugen. Virchow's *Archiv*, 1878, Bd. lxxiv, p. 393.

[‖] Cornet. Die Verbreitung der Tuberkelbacillen ausserhalb des Körpers. *Zeitschr. für Hyg.*, 1888, t. 5, pp. 191–332.

[△] Krueger. Einige Untersuchungen des Staubniederschlages der Luft in Bezug auf Tuberkelbacillen. *Dissert. inaug.*, Bonn, 1889.

[◊] Grancher. *Maladies de l'appareil respiratoire*, Paris.

[‡] Straus. *La Tuberculose et son bacille*, Paris, 1895.

[↕] Prudden and Hodenpyl. Studies on the Action of Dead Bacteria in the Living Body. *New York Medical Journal*, June 6 and 20, 1891.

That our present hospital facilities do not suffice, when the majority of hospitals supported by private charity refuse admittance to consumptives, is too well known to need any further argument, and that most of our general municipal hospitals are ill adapted to carry out successfully the proper treatment of consumptives, all those who have studied modern phthisio-therapeutics must certainly admit.

The statistics I gathered for my work on tuberculosis show that, in England, where hospitals for the exclusive treatment of consumptives have been in operation for many years, the mortality from tuberculosis has been reduced from 2,410 in a million inhabitants in 1870 to 1,468 in 1893.

In the face of such figures the utility of special hospitals for consumptives can hardly be disputed.

S. A. Knopf, M. D.

A REVIEW OF A REVIEW.

156 Clinton Street, New York, *February 24, 1897.*

To the Editor of the New York Medical Journal:

Sir: I realize that to criticise a critic may be to step on dangerous ground, but I am emboldened to attempt it by the conviction that the *Journal* has a well-earned reputation for perfect fairness in its utterances.

Under the heading of Book Notices, your highly esteemed weekly contained (page 228) a review of a work entitled *Illustrated Skin Diseases*, by Dr. William S. Gottheil. Making all allowances for the critic's prerogatives to comment on the scientific, literary, and artistic features of a book submitted for analysis to his constructive or destructive genius, I find that the reviewer has stamped as errors statements admitted to be correct by the best dermatological authorities—thus, if uncorrected, reflecting upon an able author and a creditable work.

1. The reviewer says: "Speaking of the secretion of the sweat glands, on page 22, the writer says that it is alkaline; but on page 30 we are told (though not why) that it is 'usually acid in reaction, but becomes neutral or even alkaline when produced in large quantities or for long periods of time.' A little more care in revision would perhaps have given more clearness to these statements." This uncharitable compliment could be reciprocated with equal or even greater force. I submit the following statements of several eminent authors concerning this point. A careful perusal of them will enable any one to convince himself whether or not the author is guilty of the negligence or oversight that he is charged with.

Dalton (1871): "It [the sweat] is a clear, colorless, watery liquid with a distinct acid reaction."

Duhring, *Diseases of the Skin* (1882): . . . "usually an acid reaction. Unna considers it a mixed fluid . . . its reaction varying according to its composition, the view which appears to me to be the most plausible. Its reaction is variable according to circumstances."

Robinson (1884): "Acid . . . when increased by drugs or otherwise, neutral or alkaline."

Von Ziemssen (1883): "The question is doubtful. The general opinion is that normal sweat is acid, but that excessive sweating due to jaborandi, etc., is neutral or even alkaline." Luchsinger and Trumpy found it always alkaline. The writer does not decide the question.

Foster (1885): "The reaction of the secretion of the sweat glands appears to be alkaline. An admixture of sebaceous secretion may, when the sweat itself is scanty, give rise to an acid reaction."

Hyde (1893): "The sweat excreted by the body differs under varying conditions . . . [in reaction]."

Duhring, *Cutaneous Medicine* (1895): " . . . an alkaline or acid reaction according to circumstances . . . it is generally alkaline."

Max Joseph (1895): "Concerning the reaction of the sweat opinions differ very much. In a warm bath Luchsinger found the reaction acid, but after that it remained alkaline. . . . Hauss, on the other hand, believes that the cutaneous perspiration consists of two kinds of secretion—namely, one which is weakly alkaline, and another markedly acid; the latter, being in excess in ordinary sweating, gives to the secretion a chiefly acid reaction. . . . The composition of the sweat is not yet positively discovered."

Jessner (1893): "A secretion of apparently alkaline reaction."

Having occupied so much space with this, I shall be brief with the other points.

2. The reviewer goes on to say: "Further along, in speaking of the conditions influencing the amount of sweat secreted, it is stated that a decrease in the amount of the watery vapor of the atmosphere causes an increased production of sweat, and that it is lessened by an increase of the watery vapor in the air, hindering transudation." "These," adds the careful reviewer, rather sarcastically, "are interesting observations and recent, for in neither the work of Foster nor that of Landois and Stirling . . . can this statement be found."

Foster (1881), the authority our critic refers to: " . . . Perspiration may become abundant in a hot, dry air. And practically this is the usual occurrence, since certainly a high temperature conduces . . . to an increase of the secretion, and it is possible that mere dryness of the air has a similar effect." "The total amount of perspiration is affected not only by the condition of the atmosphere, but also by the nature and quantity of the food."

Robinson (1884): "One of the main conditions that regulate the quantity of sweat formed is the quantity of blood passing through the capillaries of the skin, and this depends on the temperature, moisture, and movement of the surrounding air. . . ."

Hyde (1893): "The sweat excreted by the body varies under different conditions of temperature, humidity of the air . . . ."

3. The critic: "Contrary to the author's views, lanolin is not thought to make so useful a base for ointments as the petroleums. . . . *According to Luff's experiments on the absorption of medicaments from ointments, the pe-*

troleum ointments permit of the most rapid absorption, and lanolin is the slowest in action."

Duhring, *Cutaneous Diseases* (1895): "With simple inunction, oils and lard penetrate best; but when friction is used, lanolin does best. . . . *According to Luff's experiments, petroleum ointments permit of the most rapid absorption, lanolin being the slowest.*" It seems hardly proper for the reviewer to quote Duhring without giving credit to that eminent dermatologist, as will be seen by the italics, which are mine.

Shoemaker, *Materia Medica and Therapeutics* (1894): "It is neutral, and a good vehicle for remedies to be used by inunction, as it passes readily through the skin."

Ausspitz (von Ziemssen, 1883): ". . . Vaseline and paraffin . . . while very applicable as protective agents, stand below the fats in their direct conserving and nourishing effects on the constituent parts of the skin."

I could pick a bone with the reviewer on several other points, but they are of minor importance. It is his undeniable right to express his individual opinion concerning the form of the book, its "classification," "profuse illustration," etc., but he should be taken to account when he misquotes, when he does not criticise on the lines of recognized opinion, and hence charges an author with carelessness and oversight. I have taken up the cudgels not so much for the author, whom I esteem, or the publisher, for whom I care nothing, but for truth and scientific accuracy.

> "'Twixt truth and error there's this diff'rence known,
> Error is fruitful, truth is only one."

R. Abrahams, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of February 10, 1897.

Dr. Adolph Rupp in the Chair.

Secondary Glaucoma and Detached Retina.—Dr. H. S. Oppenheimer presented the case of a young man twenty-six years of age who had first come to him fourteen years ago, when he was a boy of about twelve years of age. He had then had a strumous appearance. The right eye had been blind always, and his left eye had been injured by a blow. In the right eye there had been a cataract which had probably been produced by excessive myopia; the left eye had looked very much the same; but in all probability the lens had only been partly opaque until this injury had taken place, and then the opacity had become denser. Practically he had been at that time blind in both eyes. The projection and perception of light in the right eye had been fairly good; in the left eye he had had perception of light, but the projection had been very faulty. The speaker had needled the lesion in the right eye, which had restored sight in that eye, which he had retained ever since. The sight was enough for him to find his way about, and to work at his trade (which did not require very sharp sight, that of chair caning) and support himself. The left eye (the projection being so faulty and near-sighted, as the right eye was) the speaker had been very cautious about touching, and had waited something like two years or more before he had thought it safe to interfere with that eye. He had done it by a series of very minute touches with the stop needle, going through the capsule of the lens, which he had penetrated, and producing an opening through which the patient could see reasonably well at the time; but some time afterward he had complained of defective vision, and this clearly indicated that the retina had redetached itself, perhaps by some jar. The patient had been lost sight of for about ten years, and now returned and complained that the left eye was very painful. The speaker said that those who wished to look could see that the pupil was dilated and the anterior chamber very shallow. Looking into it with the ophthalmoscope, one found a grayish-white membrane, and there was a mass of what in all probability was lens material remaining; but the peculiarity was that it was pushed out into the centre of the pupil where there had been a perforation ten years ago. There was, besides, a great increase of tension. His pain was lessened somewhat since he had used eserine. Now came the question of diagnosis. There was barely perception of light, no proper projection at all. There was another little point which might be of interest in regard to the action of eserine; there was a point of attachment of the iris to the lens capsule, and that had been produced since the eserine had been used. The question, of course, was to reduce the tension and get rid of the condition which was present, which could clearly be called glaucoma; but there was also another point. One ought to recognize the possibility of there being a neoplasm which pushed out that mass of lens matter from within and upward, because there was a distinct perforation through the lens through which the boy saw at one time, and that now was covered with all this mass of calcareous matter. It was a question whether there was simply glaucoma there, or whether there was a neoplasm behind it, to account for the increased tension and the detachment of the retina.

Dr. A. E. Adams asked whether pilocarpine had been used in the case.

Dr. Oppenheimer said he had not used it. He was sorry that he could not produce another patient at the same time, because the glioma (the tumor in the eye) was quite marked. The patient in that case had refused to have both eyes taken away; but in this case it was a question whether that eye should be enucleated or not. He knew nothing could be done by temporizing.

A Sterilizer.—Dr. Carter S. Cole presented a sterilizer which he had invented. He had been led by the expense of sterilizers in general, and the desirability of having some special sterilizer independent of the ordinary basins and bowls that would be found at houses, to endeavor to devise something that would be practical and at the same time reasonable. In looking over Lewis & Conger's store one day for material to make this sterilizer, he had come across the iron used for baking pans, and had asked in regard to its non-corrosibility, and had found that it would probably be satisfactory in this connection. He wished to make a sterilizer which could be used in several ways—first for boiling, then for steaming, and then for dry heat—and had found he could combine all these properties in a single sterilizer and at the same time furnish with the top of the sterilizer a tray for instruments. He showed the sterilizer, which was divided into two parts, enabling one to use one side entirely dry, while the other could be filled with water. If one desired to use the top of it for steaming, all one had to do was to fill the lower part with water, put the tray in, fill it with the instruments, and heat the water, and the instruments could be steamed. If one wanted to steam dressings, they could also be put in the compartment. The sterilizer could be put on a gas stove, and the heat would be sufficient to boil the water and sterilize the instruments readily. The top would be found very useful in a house where there was not a tray for the instruments. The handles enabled one to carry it comfortably, and the instruments could be carried in the sterilizer to and from the operation. The only practical point in using metal of this sort was to have it thoroughly dried after using it. The sterilizer could be used for dry heat, steam, or actual boiling, and it was very roomy. It was better not to have anything that would rust about the case; the metal itself would not rust—it boiled perfectly clean and dry. He asked if any one had anything to suggest that would be an improvement. One great advantage of the sterilizer was its cheapness. The actual cost of this one had been about three dollars and seventy-five cents; and at Lewis & Conger's they had said that they could make it in quantities for three dollars, which was a very material item when it was considered that sterilizers were twelve, fifteen, and eighteen dollars.

The CHAIRMAN said the sterilizer was quite ingenious, and reminded him of the one brought before the society some time ago by Dr. Mallett. Dr. Mallett's apparatus was much cheaper, but did not answer all the purposes of sterilization as Dr. Cole's did.

Dr. E. PIERRE MALLETT said it seemed to be a very efficient one and much larger than his. The cost of his was considerably less, however, being only seventy-one cents, and it was useful and efficient so far as it went.

Dr. R. C. NEWTON asked what the material was.

Dr. COLE said it was iron used for baking pans. He did not know the name. It did not tarnish, and did not change its surface from boiling. He had asked several people who used it for cooking, and they had said if it was wiped dry it did not tarnish or rust.

Reports on Cases of Ophthalmia Neonatorum.—Dr. A. E. ADAMS read a paper on this subject. (See page 454.)

Dr. WILLIAM P. NORTHRUP said that his interest far exceeded his experience in this kind of a case. He thought it a most admirable paper, and was glad the writer had gone for just the right parties this time. He thought institutions had waked up all right, they were pulling their cases down to the lowest per cent. In the Foundling Asylum he knew this precaution was taken in all suspected cases. He did not know of anything that seemed to cry to Heaven for rectification as did this abuse of midwives, who were accustomed to say that the eyes would be all right if left alone. It was one of the saddest facts, and it happened with the midwives and with the overworked physicians, not in the institutions. He spoke of one case he had stumbled upon, that of a child three years old; when he saw it, it had had the most terrific double domes in the shape of lids on both eyes. The gonococcus had been demonstrated in this case. The child had made an absolutely good recovery with nothing but a saturated solution of boric acid. He had thought best, when it had got pretty well along, to give it a little nitrate of silver—not more than five grains to the ounce—but the conjunctiva had taken on such a bad appearance that he had thought it was better not to stir it up again. In that case he could not determine whether it was a fibrous membrane or whether the epithelium had come off in a sheet.

Dr. OPPENHEIMER said he had enjoyed hearing the paper, and he seconded Dr. Northrup in the emphasis that showed it was ignorance which caused these cases of ophthalmia neonatorum. It was often the ignorance of the midwife. He did not know of any paper that could have touched a subject of more vital importance than this, when we came to consider that in Germany and Austria a third of all the blindness was traced to this source. In all Europe there were three hundred thousand blind, and something like ten per cent. of the blindness was acknowledged to be caused by ophthalmia neonatorum. According to that, there were thirty thousand people who were blind from preventable causes, always, or nearly always, arising from ignorance of the parents or the midwives. In his clinical work he made it a rule, when such a patient came to him, to ask why the family had not had it treated before, and almost as a rule he was told that the midwife had said, "Just let that alone and it will get well." In all such cases he found out the name of the midwife, and reported the case to the board of health. When we considered that Credé's method was safe and always prevented this trouble of ophthalmia neonatorum, there was no excuse for a woman, even if she was not an expert midwife, to neglect such a remedy as that. There were some families who could not afford to pay a doctor and had to resort to a midwife, and the midwife ought to be forced to take this precaution. He supposed there was no doubt about it that the eye was infected on its passage through the vagina. It depended largely upon the kind of secretion that the eye wiped off from the vagina. One was a simple mucous or muco-purulent catarrh, and so on in gradations to the severest, in which the discharge presented the gonococci. As a rule those patients got well with proper treatment more rapidly than grown people with the same trouble. He thought the application of silver nitrate to the conjunctiva, the two-per-cent. solution, used until there was no longer any discharge, was safe, and ought to be used. Dr. Adams had given one case in which the patient had died, and he thought when we found cases which were virulently infected, and had not the resistance, we were very apt to find that those eyes would be lost. He thought the average cases would get well under treatment, but there were some violent cases in which patients would get well under no treatment whatever known to us at present.

Dr. WILLIAM HALLOCK PARK said, in reference to the remarks concerning the ætiology of the case, that in his experience cultures made from a swab rubbed over the conjunctival mucous membrane were apt to be unsatisfactory, as the bacteria were frequently not rubbed off by the swab, and so the growth appeared on the media. A bit of membrane or exudate should be obtained if an accurate examination was desired.

Dr. A. T. MUZZY said that he was interested in a statement of Dr. Northrup's which he would like to emphasize, and that was that in his own practice he did not find it necessary to use a two-per-cent. solution on children where they were in a fairly good condition. The plain boric-acid solution was a very fine antiseptic in young children, and in the great majority of cases he thought it all that was necessary. One could overdo the local treatment. He thought the old-time camel's-hair brush ought to be discarded, and one was sure to be free from conveying infection by using a match with a spud of cotton; one then had a perfectly fresh article to carry the medicament. In severe cases he used the two-per-cent.

solution of silver nitrate once a day in his hospital patients and once in two days in his private cases, with a strong boric-acid solution for home use every hour or two hours, instead of using a nitrate-of-silver solution more frequently. A twenty-five to fifty-per-cent. solution of pyrozone, used frequently the first day or so and washed off with water, gave one much better results than an excessive use of nitrate of silver. It also removed the danger of looking at a scar afterward and not being altogether sure whether it was due to the keratitis, or whether it was due to the silver.

Dr. D. BRYSON DELAVAN said he could corroborate what had been said by the reader of the paper as to the value of early treatment, and he recollected, in 1875, in Charity Hospital, that there had been used a nitrate-of-silver solution in every case where the recently born child in the maternity wards showed ophthalmia. He did not remember any case in which the result had been bad. The patients had been under observation from the very beginning, and there had been every reason for them to result successfully.

Dr. NEWTON said that he remembered a remark of a friend's, that the microbes in the country did not do the mischief that they did in crowded cities. This remark was certainly true of lying-in cases. If these were uncomplicated he scarcely ever had any trouble from sepsis; and as to ophthalmia neonatorum, he had only seen one case in over eight years' practice in Montclair. This had occurred, without obvious cause, in a good family; and although it had been a tedious case it had finally yielded to ordinary treatment. His practice in delivering a woman was merely to wipe the infant's eyes and mouth carefully just as soon as the face emerged from the vulva. If the eyelids were thoroughly wiped before they were opened, there could be little chance for any infecting material to invade the conjunctival sac.

The CHAIRMAN narrated the case of a man who had acquired gonorrhœa and had then given the disease to his wife, who had been in the fifth month of pregnancy. The child had come at full time, and had never had any eye trouble. He agreed with Dr. Oppenheimer that sometimes mild cases of ophthalmia neonatorum got well without any special treatment. It seemed to him that a good deal of stress had been laid on the gonococcus, as though that was the only cause of ophthalmia in recently born infants. In the course of a discussion on abscesses of the urethra in this society, only a few years ago, it had been maintained that the gonococcus alone was the cause, but recently other cocci had been granted a share in the ætiology of those complications. He asked Dr. Adams if gonococci were considered to be the sole cause of ophthalmia neonatorum by ophthalmologists.

Dr. ADAMS said he did not mean to have it so understood in the cases he reported.

The CHAIRMAN said that diphtheritic ophthalmia complicating throat and nose diphtheria was accompanied by considerable swelling of the lids and pus formation.

Dr. OPPENHEIMER said that in his lying-in service at Charity Hospital, in which he had seen a hundred and forty-six cases, he did not see a single case of ophthalmia neonatorum, and he thought it had been due largely to the precautions he had used. He had taken it for granted that the discharge of the vagina was wiped off on the eyes in the passage of the head through it, and he had made it a rule to wash the eyes, or wipe them with a bit of soft cotton first, and after the baby had been entirely washed the first time he would have the eyelids washed again with clean water, and he thought that had been largely the cause of his not having seen any ophthalmia neonatorum. He thought that sometimes cases which were called ophthalmia neonatorum were not correctly diagnosticated. So far as his experience went, the disease might develop on the third, the fourth, or even the fifth day. He believed after that it was usually caused by the transfer of a portion of the discharge, either through clothing or through direct contact with the discharge from the mother, particularly among poor people where the child slept in the same bed with the mother, and the physician ought to caution them to be very careful about that.

Dr. NORTHRUP said that in his experience there were three full days before the infection showed itself in the eyes. At one time it had so happened that he had had cases of ophthalmia neonatorum and at the same time a number of cases of arthritis in the Presbyterian Hospital, in which there had been pretty good reason for thinking that the gonococcus was the origin of the arthritis. The characteristic of the arthritis had been that it was a fusiform swelling with a great deal of œdema outside of the joints, a great deal of pain, and a recovery which left a good joint; so much œdema had there been that it had seemed that pus was forming. The chemosis about the lid had suggested a likeness to what was seen about the joint.

Dr. ADAMS said that in 1892 he had been invited to read a paper at the opening of the Thrall Hospital, and that he had taken this subject of ophthalmia neonatorum. In that paper he had declined to say that it was always due to the gonococci. He did not believe that it was. Where it came on the third, fourth, or fifth day, with a great deal of swelling, he believed it was always due to the gonococci. Where it came on the second day, as in one of the cases that he had reported he believed that it was due to other discharges. He believed that one might have a case of ophthalmia neonatorum as late as the ninth day and not find the gonococci present. In regard to what Dr. Oppenheimer had said, that he asked the board of health to do what they could with the midwives, there was a very strict law if it was strictly interpreted; any midwife or nurse who was attending the case of an infant under two weeks of age that had sore eyes should notify some legally qualified physician within six hours. He believed there was a fine of a hundred dollars or imprisonment for six months. If the board of health wished to do so they could get at the case. One of the gentlemen had spoken of the eyes being lost. One of the leading ophthalmologists in the United States had reported two cases that he had seen early in the disease. He had had trained nurses for each of the patients, he had done everything that he could for them, and both of them lost their eyes.

Dr. PARK asked about the number of cases Dr. Adams had reported. It was a very unusual number.

Dr. ADAMS said he never had had seven cases in one month before. Three of them had been in private practice, four hospital cases. In regard to the treatment, there had been considerable said about the different solutions of nitrate of silver, etc. The one treatment he chose above all others was cleanliness, and if the eyes were kept clean they would get well, whether one used boric acid, mercury bichloride, nitrate of silver, salt water, or plain boiled water.

Dr. NORTHRUP asked how often he washed them.

Dr. ADAMS said, just as often as the pus formed; if it was every fifteen minutes, the nurse was required to wash them every fifteen minutes, and do it thoroughly.

Pulmonary Tuberculosis and the Board of Health.—Dr. W. L. Baner read a paper on this subject. (See page 453.)

The Hon. John P. Faure said he was glad to have come in just in time to hear the paper, as there was hardly any subject to which he had given more study, care, and thought since he had been in the department of public charities than the one alluded to. Referring to Blackwell's Island, he would like to say, first, that all the hospitals were overcrowded. He had this testimony from his own observation and from the reports from committees of inspection. Secondly, just a year ago the care of the insane had gone over to the State. He had cast longing official eyes on some of the buildings on Blackwell's Island occupied by the insane. He had voiced these demands to some members of the board of trustees of the Manhattan State Hospital, and had been assured that the very buildings the department wanted the most, for the express purpose of making possible special treatment of phthisis patients, were those that the Manhattan State Hospital proposed to keep the longest and vacate the last, which had not been very encouraging. He had had a conversation on that very subject with Dr. Biggs, who had said that he had been patient or impatient a long time, and they were both quite discouraged. About five of the wooden pavilions on the east end of the island were still occupied by female insane, very much against the will of the authorities of the Manhattan State Hospital. Projected buildings for that hospital at Islip it was hoped by the end of this year might relieve those buildings of their occupants, still leaving all the brick or stone buildings on the island occupied by the insane, and they had five years from the 1st of February, 1896, in which to vacate those buildings. As regarded the occupancy of Blackwell's Island for a phthisis hospital, he had been informed that the location of a phthisis hospital at, or near, or about salt water was very undesirable; that the proper location was high land far inland, and removed from the proximity and influences of salt water. Blackwell's Island would not seem to be an ideal location for a phthisis hospital. Not being a physician, he did not pretend to advance any opinion as to the correctness or incorrectness of that view. The matter of a phthisis hospital was one of deep concern to the commissioners of the department of public charities, to none more so than himself, and he chafed very vigorously under the conditions he found in all the large hospitals, especially those of phthisis patients in wards where doctors criticised their presence very severely. He saw no immediate possibility of erecting a building that would serve for the purpose of sequestration of such cases, but he was working very hard along the line and would be glad to welcome any suggestions. He wished to revive briefly a subject he had had the pleasure of treating of at the annual meeting a year ago, that of the change of name of the "City" Hospital back to the old name of "Charity." He had received very distinctly expressed opinions from that meeting, also a message, so to speak, which message he had failed to be able to cause to fructify. One reason was that he had been met with a very straightforward argument, and he wished an expression of opinion from this meeting to re-enforce his desire to change the name back to the old one. The argument against the change was this, that the poor people, the patients, always did somewhat chafe under the idea and the name of being sent to Charity Hospital; that because of that chafing, some five years ago the name was changed by the commissioners of the department of public charities and correction. He had been told that the same objection still held good; and also that the desire to change back to the old name of "Charity" Hospital was more of a sentiment, largely represented and held by the alumni who had served there when that was the name, than there was strength and force in the argument to change the present title back to the old one. He asked the members present as to the facts, and whether when they were serving there they had found any great discomfort, unhappiness, and chafing on the part of patients when they found themselves within the walls and under the roof of the "Charity" Hospital, because of that name. If any of them knew of patients who had been there since the name was changed to the "City" Hospital, were they aware of any uplifting of feeling, of any joy, of any relief from pressure, that came from a feeling that they were under a municipal roof and within municipal walls, because the building was called the "City" Hospital instead of "Charity" Hospital, and was this demand to revert to the old name only one of sentiment with the members of the alumni?

The Chairman said the members of the society were sorry that Commissioner Faure was not able to be with them at the annual dinner, and that those of them present this evening were glad that he had honored them with his presence now.

In reference to the word "Charity," no man or woman who was so low in the social scale as to need charity and medical care would be offended when that word designated the hospital which gave both. If the care given was genuine and good, the word "Charity" would not be objectionable. At the last dinner of the society a number of guests from different cities had asked: "What does this mean?" "City Hospital?" "Which City Hospital?" Those men thought the hospital was now nameless, because, although a city hospital, it needed a specific name. "Bellevue" and other city hospitals have specific names. The speaker said he believed he voiced the opinion generally held by the members of the society by saying that more "sentiment," or rather sentimentality, must be attributed to those people who had been instrumental in taking away the specific name of Charity from the hospital in which we had served, and not applied to the members of this society and the public, or that part of it that needed the services of this City Hospital. He had never heard anybody object to the name as such.

Mr. Faure said the previous speaker had exactly voiced his feelings personally and officially, but the other view was held in large measure by his associates, and he had been unable to bring them to view the matter as he did. He was very anxious to settle the matter before he got out of the board and ceased to be in the public service, and he would be glad if the alumni would send a communication to the board definitely dealing with the subject that he had brought up: that was, was the old name repulsive to the feelings of the patients to such a degree as disturbed them and prevented and retarded their recovery, or was the desire for the return to the name one of sentiment only on the part of the alumni? He asked the society to send to the board directly their opinion in regard to these two points.

The Chairman stated that it would be sent.

Dr. Park said that he wished first to touch upon the subject of the communicability of tuberculosis. That it was a communicable disease few if any would dispute. We could learn much from a study of tuberculosis in animals. A mass of facts had already accumulated to show that when healthy cattle were mixed with tuberculous cattle they were apt to become tuberculous also. Attention to cleanliness and to the isolation of infected animals had been shown to lessen the danger of the infection of healthy cattle. Tuberculosis in man followed essentially the same rules as in animals. In institutions where tuberculosis abounded and no precautions were taken, the healthy were frequently attacked; when precautions were taken they were practically safe. He spoke of two cases where in families tuberculosis had been communicated. In one family he had attended, there had been seven daughters; the father had had phthisis, the mother had remained healthy. The father had died; three of the girls had married, left home, and remained healthy; the four remaining at home had all become tuberculous, and three of them had died. He spoke of another family where one of the parents had had tuberculosis, and the children who remained at home had become tuberculous one after the other and died; the others who stayed away had not been affected by the disease. As to the health department's action he could not speak officially, but he believed he understood their intentions. The registration of tuberculous patients was desired in the first place to obtain knowledge as to where and to what extent the disease existed. In regard to the publicity, he hardly thought physicians believed that if they had a private patient who was tuberculous, the knowledge would become public property by their notifying the health department of the case. The data would be recorded and nothing would be done by the board that would conflict with the physician. Even if desired, it would be impossible for the health department officials to inspect and keep under supervision all the cases of tuberculosis in the city; as with other diseases, the physicians must be depended on to do what was necessary in the great majority of cases. The board wished to reach the uncared-for sick in the tenement population; many of these people never went to a practitioner; they went either to the dispensary or had no treatment, and many of them were very ignorant. It certainly was undesirable to have in the tenement tailor shops tuberculous patients expectorating on the floor and taking no precautions. Here and in other similar cases the department desired to send its inspectors to instruct and order what they should do.

As to the question of hospitals, what the board of health wanted was first a small hospital under its control, so that it could by the threat of removal compel people to do what was absolutely necessary and what they could very easily do. There was little reason to fear from past experience that the health department would misuse the power of removal; it was not apt to take too many persons away from their homes, it was far more apt to leave too many, for every removal meant friction and complaint. When a patient, however, absolutely refused to take any precautions, and was a menace, then it was very helpful to be able to say, "If you do not do these things, which you can do very well, we will remove you to the hospital." As to a larger phthisis hospital, the board of health did not care whether it had charge of it or whether some other department or even private money supported it, so long as it was properly carried on and tuberculous patients who desired hospital care could be provided for. The general hospitals did not want these patients. He knew of cases where persons went into hospital wards containing advanced tuberculous cases, with frank lobar pneumonia, and went out with phthisis. There were enough cases recorded where hospital internes became tuberculous during their service to show the danger of keeping advanced cases of tuberculosis in a general hospital. At Saranac one of the patients had told the speaker that thirty per cent. of the staff of a certain hospital had become tuberculous. What was needed was a small hospital, to compel people to go there who would not take any precautions, and a place where persons with advanced tuberculosis might go in their last days, and not be, as they were apt to be, a great source of danger. For those less tuberculous, he thought some other place than New York city would be better. He thought many misunderstood the position of the board of health in this matter. Those in charge were very anxious to cause no annoyance to patients except where the health of others required it. It was only where the physician had no time to look after the case, or never had been called upon, that the health department wanted to step in. Dr. Bauer in his paper had said that the health department thought the whole reduction of the death-rate from tuberculosis was due to the work they had done. The speaker did not think that the department ever professed to have been more than one of the factors in lessening tuberculosis. Since the discovery of the cause of tuberculosis, we had gained a better knowledge of the necessity of cleanliness and attention to health. It seemed to him that if physicians knew how anxious the board of health was to adopt the wisest measure, they would co-operate with them, so that methods would be finally adopted which would do the most good with the least friction.

Dr. **Northrup** said that he had refreshed himself with all the late documents which the board of health had put out, and Dr. Park had already touched on many of the points. He had tried to read between the lines of these regulations, tried to interpret the spirit of them, and he thought the profession had rather taken fright unnecessarily, and were fearing that their best patients must be removed, or that a man would pull the bell and ask in loud voice, "Is there a case of consumption here?" He thought the board of health could be trusted. Speaking from the point of view of a large hospital, he said it would be a great benefit if the wards could be relieved of those who are spitting up almost pure cultures of tubercle bacilli. It was a terrible thing to see a man with bronchitis or with acute lobar pneumonia lying in the same ward with a man who was spitting these masses filled with bacilli. Dr. Park had mentioned something about tailor shops down town. The speaker remembered a case where a long-bearded, long-haired, long-fingered man had presided over a sewing room with anywhere from twelve to twenty people bending over their work. This man had been noticed to have a fearful cough, and he would cough and spit right and left on the floor, taking no care to avoid the cloth, or the goods he was sorting out and putting around to the several machines. It was such a conspicuously bad example that a special inspector had been sent to him to explain the dangers, to caution him to be careful, as he was exposing all these people to an infection. He told the inspector he might go to —— and get out; that was all his answer. The present board of health manifesto was designed to prevent the spread of this disease. They had pronounced tuberculosis a contagious disease; it was now classed as a disease that could be controlled; they could go to the head tailor of that sweatshop and tell him he must do so and so; and they could go again, and if he had violated the law and still further exposed the workmen in that room to danger, they could force him into a hospital. As to who shall preside over such a hospital, he thought it must be a place where there was some police authority, and the board of health had such authority. Having pronounced it a communicable disease, their purpose was to acquire power to enforce sanitary regulations, to remove patients from surroundings where, by reason of willful neglect or inability, they became a menace to those about them. It was not designed that they should interfere at all with the intelligent treatment of any in houses where there would be reasonable care. When one considered the number of cases of phthisis in this city, the task of removing any considerable proportion of all cases was beyond two or three boards of health. The facts were, first, that tuberculosis was a communicable disease; secondly, it was easily controllable; thirdly, it was curable. It was the most easily controllable of all the communicable diseases, simply by knowledge of its nature, and it could be freed of the danger of communication by the simplest known regulations, that anybody could understand. As to the susceptibility of people, it had been asserted that one half of the adult population of this city had at some time been the subject of tuberculosis, which argued that the susceptibility was universal. The first efforts of the board of health had been educational, now they had come to the point where they thought they could reenforce the preliminary education by requiring compliance with their regulations. It was a disease which when they were fully instructed they would know that it was preventable, that all people were susceptible to it, and that it was curable. It seemed to the speaker that the rights of the intelligent citizens demanded that they should be protected from the willful neglect of ignorant people, of superstitious people, of people who had no responsibility, who cared nothing for their own lives or anybody else's, and he thought the board of health should be sustained in its endeavor to protect the community.

Mr. **Faure** said that as a member of the official municipal family he wanted to say, with all due respect to President Roosevelt, of the police department, and Colonel Waring, of the street cleaning department, that, in his opinion, there was no more conscientious, no more efficient, no more vigorous, no more wise and clear-headed man in the city government than Charles G. Wilson, of the health department, a man whose judgment could be relied upon in an emergency to strike a blow with caution and prudence and gentleness, and who could always be relied upon to use wisdom and judgment in the fullest measure.

Dr. **Delavan** said that while all present thoroughly understood the nature of tuberculosis and were aware of its dangers, there were possibly some who might question its prevalence in New York city, and who might, therefore, fail to appreciate the urgent necessity which existed for the better management of it. Both in the care of individual cases of a certain class and in the methods which should direct its supervision in general much additional knowledge was needed. It seemed to be the sole aim and desire of the board of health to secure this knowledge and to give the benefit of it to the public. If there was to be any misapprehension of the aims of the board of health, he hoped that it would not come from the medical profession. Considering the far-sighted views which the health board had advanced in this matter, not to mention the splendid results attained by them in the case of work already done in similar lines, it would be well to avoid too hasty criticism, and, instead of hampering them by objections, to first thoroughly understand the nature of their proposition, and then seek as far as possible to sustain them. Certainly it was wrong to oppose their efforts without first suggesting something better than what they had proposed. While it was denied by some that the generally recognized causes of infection (sputum, infected milk, etc.) were factors in the spread of consumption, and while the statistics for the past fifty years showed that the disease was steadily upon the decline, nevertheless tuberculosis was a fearfully common disease among all classes. If the board of health were to undertake the study of the disease after the method of collective investigation so successfully employed by them in other departments, the result would be that they would advance the knowledge of the general physician, to his own advantage and to that of his patients. What kind of hospitals to have, under what management they should be placed, and where located, were all details of minor importance and not to be considered in comparison with the main question. There was absolutely nothing in the enactment which the board of health proposed which should not challenge the respect, the confidence, and the complete support of the medical profession. By the laity at large it had already been received in many quarters as a welcome aid.

Dr. **Egbert le Fevre** said that no one felt more than he did the need of doing something to stop the dissemination of tuberculosis, and he wished to explain his attitude in this matter. He was not against the board of health, but criticised its edict, and had done it conscientiously, realizing the difficulty in enforcing it and seeing some phases of it that he did not agree to. In the first place, as to the communicability or infectiousness of tuberculosis: the experience at the Brompton Hospital had not been such that we need fear the collection of large numbers of consumptive cases in a hospital. He was surprised at the few cases that had developed among the internes and nurses of that hospital. Their only preventive was cleanliness. The tubercle bacilli did not retain their virulence in all instances; on exposing the dry sputum to sunlight, in a few hours the tubercle bacilli lost their virulence. The next point was the compulsory registration at the board of health of all tuberculous cases, and the practicability of carrying out their scheme by inspectors. Whom did they intend to treat? He had confidence in the present board of health, but with the greater New York, could one look forward in the next five years to a board of health as wise and as prudent as the present? He thought it unwise to give too much power to succeeding boards. He did not think the board was going to use its power unwisely, but in 1894 the board of health had directed that the medical sanitary inspectors, detailed for this work, visit the premises for all cases of tuberculosis, distribute circulars, and instruct the consumptive and the family as to measures to prevent the dissemination of the disease, and advise as should seem necessary for the cleansing or renovation of the apartments to render them free from infectious material. He did not think that with the present board any unwise action would be taken, but there was a danger in days to come. Generally the board of health could not do anything until they had the entire confidence of the profession, but if the compulsory registration took place, the physicians would be absolutely helpless in the matter. He had talked this matter over with Dr. Biggs; and two years ago, when in England, he had visited a number of the men who were working especially in tuberculosis, and they had all agreed that something ought to be done, but that whatever was undertaken must protect the welfare of the patient and have the confidence of the physician. Under the registration act he believed some good might be accomplished, but unless the board had the co-operation of the physician the registration would not amount to much. The board of health had unearthed many cases of contagion, but if they knew the number of cases of diphtheria, scarlet fever, and measles in this city that were hidden, they would doubt their ability to watch a disease like tuberculosis, and the compulsory registration would not have definite results. If, on the other hand, the physicians notified the board of health wherever the sanitary conditions were bad, and the board respected their confidence and inspected in those cases, that would be very different from a wholesale registration of cases. This inspection was going to demand an immense number of men. For the salary that the board of health could pay, their inspectors were not going to be above the average of the ordinary physician. They could not follow up a case, and it would only add annoyance, and the physician would not report the case until the last stage of the disease. The best work that the board of health was doing in the matter was in the early diagnosis of the disease, the diagnosis by sputum examination; by this the physician was enabled to have a bacteriological examination that would aid him very much; but if the physician feared the subsequent inspection he would not send a specimen, and the patient would suffer from the want of an early diagnosis. In the regulations of the present board of health for most infectious diseases very little expense was entailed on the owner for the disinfection of the premises. The rules for phthisis were much more severe, and he thought that if we were to have compulsory registration, we must have rules and regulations that would be easy to carry out. For a number of years he had been connected with dispensary work and had been through all portions of the city. He knew the feeling of the men uptown and down. The men uptown would report their cases, for they felt that nothing was going to be done; but the men working in the tenement houses knew that something was going to be done, and they were going to suffer. As soon as that spirit was engendered they would protect their patients from the board of health every time. He doubted the expediency of putting this in force at the present time, and thought it would be better to let the subject of compulsory registration rest for a while and find out just where everybody stood, rather than enforce it at this time.

Dr. PHILIP A. MALLESON said that we must admit there was a feeling among a large number of physicians of this city that we were fortunate in having, at this time, an efficient and well-meaning board of health, but that in dealing with the subject of tuberculosis they had advanced far too rapidly. They had formulated rules governing practitioners without consulting, through our numerous medical associations, the mass of physicians as to new methods to reach an end most ardently desired by all. The very nature of the safety of the public health placed it, primarily, in the hands of the individual practitioner; therefore, the statistics of tuberculosis were incomplete, inaccurate, and misleading, because the health board had not encouraged or sought the co-operation of the physician. In the argument of the last speaker and also Dr. Northrup, the sharp line of discrimination between the brownstone and the tenement was not right, until it was proved that that portion of humanity which dwelt in private houses had not tuberculosis. Was it humane to banish only the tuberculous unfortunates of our hospitals and tenements to this proposed tuberculous hospital or penitentiary, and treat a misfortune, common to all in a greater or lesser degree, as a crime? Would the espousers of this plan be willing to be isolated in this their ideal institution?

Dr. DELAVAN said he would really like to ask what better scheme could be suggested.

The CHAIRMAN said, in regard to Dr. Delavan's question, "What can be done better than what the board of health proposes to do?" that it was altogether apart from the questions at issue. For more than two thousand years it had been affirmed and denied that consumption was a contagious disease; but those who were present to-night, and all others who had served in Charity Hospital, had demonstrated that this disease was not catching in the sense that had been sprung on the public by the board of health of this city. Human tuberculosis and cattle tuberculosis were very different affections, and involved different biological questions. The tuberculosis contagion of the experimentalist was a very different matter from the catching qualities of this disease in everyday human life. The matter as interpreted by the health board was shortsighted and contracted. The questions involved were far from being purely medical. The whole matter had its economic, political, and sociological aspects too. Many a consumptive was able to live tolerably easily and be of great service to his family, and thus to the state, without jeopardizing the public at large, or necessarily his own immediate friends and relatives. If the health board were to put into practice what had been threatened, could the city or the State bear the expense? For instance, fifteen years ago a man now living had been told by an eminent and distinguished specialist for lung diseases to go home and die. This man had had tuberculosis and still had it. During those fifteen years this man had made a fortune, his son had become a lawyer, and his daughters teachers. Well, if such persons were now to be corraled away from their families and from society, could the city make up for the losses that the proposed action of the health board involved? No. As to educating the public, particularly the poorer part of it, the health board had been exaggerating. Aside from financial losses which the proposed action of the health board would entail, such action would, in a large measure, blunt, and finally vitiate that sentiment which gave stability, not only to the State and society, but to the family itself—namely, personal affection and love.

Dr. BANER said that he did not want to be placed in the light of opposing in any way modern methods of scientific medicine. The present question was merely as to the expediency of certain propositions. Dr. Park had referred to the patients in dense districts as being the principal sources of danger, and Dr. Biggs, in the letter read by a speaker, had also spoken of these patients. These dense districts were regularly visited by the inspectors of the health department and all cases of phthisis were reported by them. Dr. Northrup had spoken of the tailor who was willfully negligent and supposed to be spreading the disease. There ought to be a certain amount of authority on the part of the board of health, so that, when such a case was found absolutely detrimental to the public health, it could be taken care of. The speaker could not see why they should not have that power. As to Blackwell's Island being a good place for the phthisical poor, anybody who could be sent to a place farther inland would, of course, be a great deal better off, but the great majority of cases had to be treated near New York.

Miscellany.

A New Form of Mycosis.—The *Presse médicale* for March 6th publishes a report of a recent meeting of the Société nationale de médecine de Lyon, in which it is stated that M. L. Dor presented microscopical sections showing the large yellow grains of the new form of mycosis, related to actinomycosis, concerning which M. Poucet had made a communication at the last meeting of the Congrès de chirurgie. One of the patients alluded to by M. Poucet was not completely cured. He had a relapse in the form of a chronic phlegmon of the neck. When the phlegmon was incised there were found in the pus ten large grains, some of which were nearly as large as an ant's egg.

These grains were hardened, imbedded in paraffin, cut with a microtome, and colored with methyl violet; they were then treated with potassium iodide and iodine, eosin, alcohol, oil of cloves, and xylene, and prepared in balsam. In the centre of these grains M. Dor found a mycelium which presented a very graceful arborization of a violet color, in the meshes of which were globules colored a slight orange tint from the eosin.

M. Dor called attention to these globules and said they appeared to be homologous with the granules of actinomycosis; their dimensions were at least six times as large as those of the granules, and, besides, they were inside of the grain instead of being at the periphery. Their presence, he thought, seemed to establish the very close relationship of the new form of mycosis to true actinomycosis, although the distinguishing characteristics were sufficiently evident, so that it would not be possible to consider that they were quite the same. Moreover, the mycelium was much larger and presented bifurcations much rarer than those of true actinomycosis.

M. Poucet thought that, clinically, the patient presented dental lesions, and that the evolution of the affection was much more like a complication of dental caries than the usual form of actinomycosis.

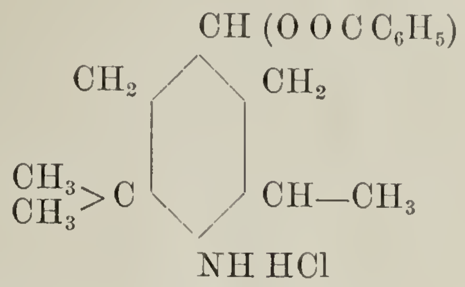
Regarding cultures, M. Dor said that, contrary to what occurred with true actinomycosis, the parasite of the new form of mycosis grew very rapidly in bouillon, and at the end of twenty-four hours the culture was very abundant. The parasite at first presented itself in the form of long filaments, which subsequently diminished in length and finally resembled common bacilli. It was for this reason, probably, M. Dor thought, that Savtchenko, who seemed to have observed the same form of mycosis, had presented it as being a pseudo-actinomycosis bacillus.

Unfortunately, rapid development of the cultures rendered them impure, and in this condition it would be impossible to study the new parasite with all the details that such an investigation required.

The Use of Eucaine "B" in Ophthalmic Practice.—Dr. P. Silex, of the Berlin University Ophthalmological Clinic (*Deutsche medicinische Wochenschrift*, February 4, 1897), says that several months ago a new anæsthetic, eucaine, was sent to Professor Schweigger's ophthalmological clinic for trial. Dr. Silex made the experiments with it himself, and his conclusions were that it was not equal to cocaine. It did indeed, he says, cause anæsthesia of the cornea, but its instillation was followed by such violent burning and by so great an injection of the ocular conjunctiva that he ceased using it after about fifteen patients had been experimented with. Best, who used it in the Giessen clinic, also obtained no satisfactory results. Vinci's work was purely scientific, and referred only in a few words to its practical application. From an ophthalmological standpoint, therefore, the anæsthetic had but a minimal value; and thus chemistry was incited to discover a compound that would obtain more general recognition.

Such a one, says Dr. Silex, is eucaine "B," of which considerable quantities were placed at his disposal.

Eucaine "B" is the hydrochloride of benzoylvinyldiacetone-alkamine, and its constitution is expressed by the formula:



It is closely related not only to the older eucaine "A," but also to cocaine, and especially to tropacocaine; but it differs from the two last-named bodies in that it is much less toxic. The hydrochloride also differs from the similar cocaine salt in that it can be boiled for a long time without undergoing decomposition. Its solution can therefore be sterilized by boiling.

The hydrochloride of eucaine "B" dissolves in water at about 70° F. to the amount of about five per cent. Dr. Vinci says three per cent., but this is not the case. The solution is of a neutral or very faintly alkaline reaction. It differs from eucaine "A" in that its irritant effects are minimal, and are only seen in isolated cases. This circumstance, together with its very slight toxicity and its powerful anæsthetic action, renders eucaine "B" very valuable for a variety of purposes; among others, for the Schleich infiltration method and for subcutaneous injection in general.

Encouraged by its general good qualities, he experimented with the eucaine "B" in regard to its local action, using it in a two-per-cent. watery solution on normal eyes, on inflamed eyes, and in operations upon the eyes.

1. He instilled cocaine (two per cent.) into one eye, and eucaine "B" (two per cent.) into the other. Many patients experienced no burning at all from either instillation; in others the cocaine, and in others again the eucaine "B," caused the more smarting. To him personally cocaine was the more disagreeable. On the application of a second and a third drop after two and four minutes' interval, the resudlts were again contradictory. Many patients affirmed that there was no pain to speak of at all.

The anæsthesia of the cornea was about the same in the same space of time in most of the cases. Eight times out of thirty-one observations he noted that insensibility came on more rapidly and was more marked in the eucainized eye. It appeared in from one to three minutes, and disappeared in from fifteen to twenty minutes. On the average, two drops produced a marked anæsthesia in two minutes.

In all the cocainized eyes an even whitening of the sclera occurred, caused by the vascular constriction and the secondary anæmia, while the eucainized eyes in half the cases showed no changes of vascularization at all, and in the remainder merely a delicate circumcorneal rose-colored injection and a dilatation of the vessels of the connective tissue of the eyeball. This dilatation was always very moderate, and the patients never suffered any inconvenience at all from it. In both classes, however, anæsthesia was present. He thinks the phenomenon due to a contact paralysis of the superficial nerve endings.

The vascular dilatation in some of the cases appeared to be due to paralysis of the sympathetic nervous system, for an irritation such as occurs after the instillation of cocaine always causes narrowing of the lumen of the vessels, and the anæsthesia is probably due to the deficient nutritive supply that is thus occasioned. Whether the vascular dilatation is due to irritation of the vaso-dilators or to paralysis of the vaso-constrictors—both of which factors are capable of causing it—is a thing concerning which we have as yet no exact information.

From theoretical considerations he believes that cocaine as an irritant causes spasm, and eucaine paralysis, of the constrictors. The action of the latter drug is an entirely local one. Müller's muscle and the pupil are not acted on, as with cocaine. The size of the pupil is unchanged, and the sphincter reacts promptly to light and convergence. Three eyes that were kept in a condition of complete anæsthesia by means of repeated instillations for twenty minutes showed not the slightest dilatation of the pupil. Vinci saw an enlargement of the aperture to the extent of from one fiftieth to one twenty-fifth of an inch only after large doses. Accommodation was never affected.

In regard to any change in the intra-ocular pressure, Dr. Silex can only say that he could find no diminution of it in the thirty normal eyes that were experimented with. Others, he says, have found this to occur with eucaine "A"; perhaps, he suggests, they had a more delicate sense of touch than he possesses, and perhaps it might have been apparent if another eye had been tried. The disturbing influence of hypotonia in operative procedures after lengthy cocaine instillations is well known, he says, to every operator. If this is entirely absent, or but little marked with eucaine "B," it would be a very great point in favor of the drug.

He has not observed any corneal cloudinesses that were visible to the naked eye. After the instillation of one or two drops of each solution into a pair of eyes, if they were held open for a few minutes, examination with the lens showed almost always roughness of the surface and the well-known system of irregular, wavy, broad lines in the cornea of the cocainized eye; while in the eucainized eye these appearances were entirely absent. An uncertain, delicate, veil-like cloudiness of the superficial layers could indeed be seen, but not so frequently as with cocaine. If after the instillation the eyes were closed at once, or the lids covered with moist cotton, both sides usually remained intact; only occasionally could the above-mentioned lines be perceived in the cocainized eye.

Opinions still differ, says Dr. Silex, as to the reason for the appearance of the cloudiness after the use of cocaine, but practically it may be almost always avoided by keeping the eye moist. The employment of eucaine "B" may enable us to reduce the number of cases of cloudiness of the cornea, since it causes no lymphanæmia of that tissue.

2. A large number of inflamed eyes were experimented with, including cases of foreign bodies in the cornea, losses of epithelium, corneal ulcerations, irritated interstitial keratitis, episcleritis, and iritis.

It seemed both to him and to the other physicians that worked with him that during the removal of foreign bodes from the eye the patients had less sensibility with eucaine than with cocaine. Conjunctival injection of common salt in episcleritis caused no trouble at all after a double instillation. Four corneal ulcers were cauterized. The injection of the globe that sometimes occurred neither caused the patients any inconvenience nor interfered with the operator in his manipulations. In short, the therapeutic behavior of the drug was exactly like that of cocaine.

In a corneal wound of the size of a finger nail, with a large and deep loss of the epithelium, six drops of cocaine solution gave relief in twelve minutes. An hour later violent pain set in again, which was relieved by five drops of eucaine "B" solution in ten minutes, though the eye was now fiery red.

He mentions, however, that in affections that were accompanied by marked hyperæmia of the anterior segment of the eyeball, such as iritis, the patients preferred cocaine to eucaine. The cocaine anæmia gave them relief. Cocaine and atropine were pleasanter also in these cases than eucaine and atropine.

3. The remedy was tried during the extirpation of chalazion, section of the tear duct, one tenotomy, three iridectomies, and three secondary and twelve senile cataracts. No difference could be appreciated by either the operator or the patient between the two drugs.

In the cataract operations six drops were instilled during the ten minutes before they were begun. Some of the eyeballs became injected a little, others not at all. This is a matter of indifference, however, during a corneal section, he says, and also, he thinks, during the formation of a conjunctival flap; a few drops of blood will in no way interfere with an operator.

Hypotony and clouding of the cornea did not occur; the eyes were kept covered. The number of cases is, however, as yet a small one.

The behavior of the patients when the iris was seized was very various. Just as occurs with cocaine, some complained of pain, and others did not.

To give a general opinion as to the value of the remedy, he can say that, so far as the specimens used in the University Ophthalmological Clinic are concerned, it fully satisfied all the demands that could properly be made on it. Patients affected with iritis, who have already had cocaine, he thinks, will probably miss that drug. The unchanged pupil is an advantage in cataract operations, where the iris can be better avoided than when it is dilated, for it often becomes difficult to pass the thick mass and make the incision into the limbus.

He can recommend the employment of eucaine "B," and thinks it deserves a place in our armamentarium. It is always an advantage, he remarks, if we can replace the natural product of distant lands by a scientific chemical compound.

The Venom of Honeybees.—At a recent meeting of the Society of the German Physicians of Prague, a report of which is published in the *Gazette hebdomadaire de médecine et de chirurgie* for March 11th, Dr. Langer stated that he had made experimental researches with the secretion of the poison glands of honeybees. When he deposited this secretion on the conjunctiva of rabbits, lacrymation, winking, hyperæmia of the conjunctiva, chemosis, and a purulent discharge supervened. All these symptoms disappeared ordinarily at the end of five days.

The secretion of the poison glands was a clear and transparent liquid, with an acid reaction and an aromatic odor, and it contained a small quantity of formic acid. At the time of its secretion it contained no microbes and had even a slight bactericidal action.

If the secretion was diluted with water so as to make a one-per-cent. solution presenting no acid reaction, the diluted liquid would still provoke in the conjunctiva of the rabbit the same symptoms of irritation, and this, Dr. Langer thought, seemed to prove that the toxic principle was not formic acid. Researches made for the purpose of isolating this toxic principle showed that it was a substance presenting the reaction of alkaloids, also that it resisted heat and congealment as well as the action of the acids.

When it was injected into the veins of a rabbit it caused death very rapidly; introduced under the skin, it give rise to local gangrene; injected into the peritonæum, it caused death within ten hours. In dogs the venom of the honeybee acted in the same way as the venom of the adder.

The Meeting of the American Medical Association.—Dr. H. A. Hare, of Philadelphia, the chairman of the committee of arrangements, asks us to call the attention of those of our readers who are thinking of coming to Philadelphia to attend the semicentennial meeting of the association, to be held on June 1, 2, 3, and 4, 1897, to the fact that there will be, in addition to that meeting, at the same time a large mercantile convention which will make use of a considerable number of the rooms in the various hotels.

For this reason, says Dr. Hare, it is advisable that physicians who intend to be present at the meeting should write at once to one of the following hotels, to engage such rooms as they desire at the rates named:

Hotel Walton, Broad and Locust Streets: $1.50 and upward a day, European plan; $4 and upward a day, American plan.

The Colonnade, Fifteenth and Chestnut Streets: $1 and upward a day, European plan; $3 and upward a day, American plan.

The Lafayette, Broad and Chestnut Streets: $1 and upward a day, European plan; *table d'hôte*—breakfast, 25 cents to $1; luncheon, 75 cents; dinner, $1.25.

The Bingham House, Eleventh and Market Streets: $2.50 and upward a day, strictly on the American plan.

Hotel Stenton, Broad and Spruce Streets: $2 and upward a day, European plan; $4 and upward a day, American plan.

The Continental, Ninth and Chestnut Streets: $3 and upward a day, strictly on the American plan.

The Windsor, Eleventh and Filbert Streets: $1 and upward a day, European plan; $2 a day, American plan.

The Stratford, Broad and Walnut Streets: $1 and upward a day, European plan only.

Girard House, Ninth and Chestnut Streets: $2.25 to $3 a day, strictly on the American plan.

Hotel Hanover, Twelfth and Arch Streets: $2.50 a day, strictly on the American plan.

Aldine Hotel, Chestnut Street, above Nineteenth: special rates to members of the American Medical Association, $2.50 a day on the American plan; $1 to $3 on the European plan.

The price quoted in each instance is for one person only. Rooms commanding only the lowest price are naturally limited in number. It is especially desirable that each member intending to be present at the meeting shall, personally or by letter, make his arrangement with the hotel at which he desires to stop.

It is worthy of note that the rate of $1.50 a day at the hotel headquarters, the Hotel Walton, is the rate for two people in one room. All these hotels are within a few blocks of the meeting places and most of them are within two blocks.

As a subcommittee of the general committee of arrangements has arranged clinical courses in all branches of medicine at the various teaching institutions and large hospitals during the week prior to and following the week of the association meeting, it has been thought that a considerable number of physicians would be glad to embrace the opportunity of refreshing themselves in the various branches by attendance on these courses, for which no charge will be made by the gentlemen giving them; and, as their stay in Philadelphia will therefore be for more than a few days, it has occurred to the committee that some of the visiting physicians may wish to take rooms at some good boarding house. The chairman of the committee on reception and accommodation, Dr. G. E. de Schweinitz, 1401 Locust Street, will be glad to send the addresses of such boarding houses to gentlemen who desire to stay for a week or more.

The large number of gentlemen who have already signified their intention of attending the meeting and the very large number of able and interesting papers already placed upon the programme indicate that this will be the most important meeting which the association has ever had, and it is hoped that every physician who is a member of a regularly organized county medical society will make an effort to attend.

The meeting halls for the various sections are situated so close to one another that different papers in different sections can readily be listened to during a single morning's session by those who do not wish to devote their time to one particular specialty.

Persistent Blushing.—If the phenomenon of emotional blushing, remarks a writer in the *Journal des praticiens* for March 13th, is a rather frequent occurrence of a psychical nature, it may become the starting-point of a peculiar mental condition almost amounting to a fixed idea, to a delusion. M. Pitres and M. Régis, says the writer, have made a most interesting study of this variety of "phobia," the principal points of which are given in the *Archives de neurologie* for January, 1897. Concerning the mental effect produced by blushing, it may be divided into three degrees, as follows: 1. Certain individuals have simple ereuthosis; they blush very easily; for nothing their faces become animated and flushed, but they are not concerned about it, and it does not annoy them. 2. In the second group may be ranged the individuals who not only blush very frequently, but are more or less distressed on account of the affection. In some the proneness to blush is only temporary; in others it is lasting. These persons are annoyed at their disposition to blush; they are very anxious to rid themselves of the affection, but the sense of annoyance and the desire are not lasting, and they do not think of it, except from time to time, after an attack of blushing which leaves them ashamed and irritated for a while; afterward they become cheerful. 3. There are others in whom the anxiety caused by the blushing amounts to a veritable delusion, an extremely painful dread, obstinate and continuous.

The patients observed by M. Pitres and M. Régis were young men twenty and thirty years of age. The family history of each showed nervous troubles, alcoholism, and tuberculosis. The state of the weather more or less affected the condition of these patients, who blushed less during the dry cold of winter and the intense heat of summer; during hot, damp weather they blushed much more readily. The fact of finding themselves in the presence of others, of passing places where they could be seen, caused an attack of blushing.

These attacks, says the writer, occur in the patient nearly always at the moment when he is apprehensive of its appearance. Generally, he feels it coming; there are nearly always premonitory symptoms and a greater or lesser degree of intensity in the blushing, which vary according to the individual. The variations are from a light color to a scarlet and have no influence whatever on the mental condition. Sometimes the capillary pulse is very distinctly perceptible. The attacks of blushing are more frequently limited to the face and are arrested at the neck. A sensation of heat, often very intense, accompanies them; a more or less profuse perspiration ordinarily manifests itself in the last stage of the attack. From the beginning the patients undergo inexpressible sensations of anguish; there is a feeling of confusion with a sense of anger toward everybody; they are so completely under the influence of this delusion that they become neurasthenics, hypochondriacs, and pessimists, and sometimes they are even inclined to suicide. They lead a peculiar existence, avoiding all contact with others, shunning pleasure, and resorting to innumerable artifices to prevent or to conceal their attacks of blushing; many become alcoholics.

In regard to the evolution of this affection, it may be remarked that in all cases the tendency to emotional blushing precedes by several years the morbid dread of blushing. The order of succession of symptoms is as follows: Vasomotor symptom (blushing); emotional symptom (confusion); and mental symptom (fixed idea). The attacks of blushing, after the delusion is established, are generally engendered by the idea of blushing, that is to say, the mental element. According to Pitres and Régis, in this affection, as in many others, the constant and fundamental phenomenon is, without doubt, emotion.

Accidents Caused by the Ingestion of Antipyrine.—At a recent meeting of the Société de thérapeutique, a report of which appears in the *Progrès médical* for March 13th, M. Lyon called attention to a case of poisoning with antipyrine which had occurred after the ingestion of two doses of the drug, the first dose consisting of thirty grains and the second of fifteen. The patient had been attacked each time by pemphigoid dermatitis and stomatitis, but no albuminuria had been observed. M. Lyon was convinced that renal insufficiency had been the cause of these accidents.

M. Blondel recalled an analogous case in which the eruption in the mouth had assumed the appearance of mucous patches. M. Desesquelle referred to a case in which there had been cutaneous symptoms due to the use of antipyrine in an arthritic patient who was subject to urticarial eruptions caused by eating preserved food, shellfish, and other toxic food.

M. Duhourcau and M. Dalché thought that accidents due to the use of antipyrine should not always be attributed to renal insufficiency. M. Pouchet was surprised that no cardiac troubles and cyanosis had been observed among these accidents. He himself had seen more important symptoms in some patients than cutaneous eruptions. M. Josias, however, had never seen these cardiac troubles, and thought they must be comparatively rare.

M. Bardet cited a case in which very grave symptoms had supervened after the administration of a small dose of antipyrine. The symptoms were painful swelling and blisters on the hands, the feet, and the vulva; no albuminuria had been observed.

Contraindications to the Employment of Sodium Salicylate in Rheumatism.—According to the *Lyon médical* for March 14th, M. Jaccoud long since demonstrated (*Journal de médecine et de chirurgie pratiques*, February 10, 1897) that grave inconveniences might arise from the employment of sodium salicylate in acute articular rheumatism with visceral localizations. Not only does it not cure these manifestations, but it does not prevent them, and it may even favor the production of certain of them.

This drug seems to favor the cerebral symptoms of rheumatism, and its employment should be suspended as soon as delirium sets in, before the diagnosis of cerebral rheumatism is established. This suppression is necessary also if the delirium is of an alcoholic or hysterical nature, or if it arises from any form of intoxication.

It is the same also in cardio-pulmonary localizations, which are much more important on account of their frequent occurrence. During the past ten years M. Jaccoud has observed that the salicylate acts on the pains and on the fever, but not at all on these localizations, and as it has a depressing action on the heart from the time these symptoms appear, its use must be discontinued. By persisting in its employment involvement of the myocardium in the disease is certainly hastened. Numerous statistics show, moreover, that these localizations are not cured or even prevented.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 1st inst., Dr. L. Duncan Bulkley was to read a paper on The Relation of Diseases of the Skin to General Conditions, which was to be discussed by Dr. Louis A. Duhring, of Philadelphia, Dr. A. Jacobi, Dr. Joseph Collins, Dr. E. B. Bronson, Dr. G. T. Elliot, Dr. W. H. Draper, Dr. R. W. Wilcox, Dr. A. R. Robinson, and others.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 8th inst., the following papers will be read: Infantile Athletics, by Dr. Henry Ling Taylor; and Congenital Dislocation of the Shoulder, its Diagnosis and Treatment, by Dr. A. M. Phelps, which is to be discussed by Dr. Lewis A. Stimson, Dr. R. H. Sayre, Dr. Robert T. Morris, Dr. V. P. Gibney, and others. Cases will be presented by Dr. Charles E. Nammack and Dr. Henry Ling Taylor.

At the next meeting of the Section in General Surgery, on Monday evening, the 12th inst., the following reports of cases will be presented: The Result of Implantation of Bone Chips Five Years after Operation, by Dr. C. L. Gibson; The Successful Removal of a Subcortical Cerebellar Tumor, by Dr. G. E. Brewer and Dr. Joseph Collins; Radical Operation for Femoral Hernia—Osteoplastic Resection of the Sternum for Retrosternal Dermoid, by Dr. Willy Meyer; and Bacillus Aerogenes Capsulatus, by Dr. John Erdman, Dr. H. H. Brooks, and Dr. E. K. Dunham.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 13th inst., the discussion on Specimens of Malignant Disease of the Penis, presented by Dr. S. Alexander at the February meeting, will be continued by Dr. J. C. Johnson, Dr. R. W. Taylor, Dr. E. K. Dunham, and others. Dr. Willy Meyer will read a paper entitled A Report on Catheterism of the Ureters in the Male. Patients will be presented and specimens and new instruments exhibited.

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Original Communications.

THE NEW INSANITY LAW AND THE COMMITMENT OF THE INSANE.

By S. B. LYON, M. D.,

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Much has been said and written, and the subject has been discussed in various medical and legal meetings, of the new insanity law, so called; but it is still doubtful, however, if the majority of the physicians of New York have seen the law, and are familiar with its details, and, consequently, able to judge how far the criticisms made by the doctors on the one side and the lawyers on the other are fair and reasonable. The new insanity law is, to a large extent, a codification of different laws which have been passed from time to time regarding the relation of the State to its insane citizens. The part which has been most criticised is that relating to the commitment of patients to the various public and private hospitals of the State—the lawyers, on the one hand, alleging that the provisions do not afford sufficient protection to the citizen from deprivation of his liberty, and certain doctors, on the other, that the new certificate which is prescribed by the new insanity law is too detailed, takes too much time and attention of the doctors, and is in some respects deficient, the latter principally in not making any provision for the temporary reception and treatment of an emergency case of insanity in a hospital at a time when it may be impossible, although the doctors have done their full duty in the matter, to find a judge to commit the patient. That this latter complaint is not without reason is known to numerous examiners in lunacy, who have been unable to find a judge, particularly during the summer vacations, when from Friday night till Monday morning, legal proceedings being mostly suspended in courts of record, the judges are quite likely to be at various summer places over these holidays.

All good citizens, whatever their profession, must desire to see exact justice, tempered with humanity, exercised in the cases of patients suspected of lunacy, where either the safety of the patient or society, or the well-being of the patient, raises the question whether he should be committed to a hospital for the insane for restraint and treatment. It is idle to ignore the fact that in a State like New York there are more than twenty thousand persons recognized as insane and legally committed. It is also true that many insane persons are at large in the State, where the emergency does not yet seem to have required their commitment to any hospital; and beyond these, a certain number of new cases of insanity are sure to develop in any one month or year, judging by the past and the law of averages; and as such new cases of insanity arise, they must be dealt with by somebody, and under some provision of the law. The old certificate—which went out of effect on the 30th of June last—safeguarded the rights of the insane as fully as the new, for the reason that the judges of courts of record of the State were fully empowered by the law, as it then existed, to make just as full inquiry, to obtain just as much evidence—and to summon a jury if necessary—as in their judgment was requisite to their personally obtaining a knowledge of the case sufficient to commit the patient. Neither then nor now could any doctor, or number of doctors, commit any patient to a hospital recognized as such by the laws of the State and the rules of the State commission in lunacy. The new law adds some details to this; and as it should be a matter of information, if not of interest, to the medical profession in general, in whose practices cases of insanity are liable to arise at any time, I will briefly detail the provisions of the law as it now stands, which law was enacted last winter by the Legislature, largely, as I understand, through the influence of persons other than the medical profession, who thought the liberty of the citizen was not sufficiently safeguarded by the old law.

Supposing a person is now suspected of lunacy, the following are the steps which must be taken before he can be committed to any hospital for the insane:

First. Two examiners in lunacy must examine him as to the condition of his mind. These examiners in lunacy are certain physicians who must have practised their profession at least three years, and must have filed with the State commission in lunacy a certified copy of the certificate of a judge of a court of record in this State which shows that the said judge knows the physician to be qualified to make such examination as to the insanity of a suspected lunatic. It is to be supposed that a judge would not certify to the qualifications of a medical examiner unless he had some personal knowledge of such qualifications; and, in fact, the physicians who have been so certified throughout the State are, as a rule, well qualified, not only by three years, but by many more years of practice, and by having given a great deal of special study to mental disease. These examiners in lunacy must make a careful examination of the patient separately as often as they choose, but once jointly, for consultation and confirmation of their opinions, and must swear to the facts, which they set forth systematically upon a prescribed form, that they are, to the best of their knowledge and belief, true.

Second. A petition to a judge of a court of record must be made by a person other than the two physicians, directly interested in the patient, who in the law is stated to be "Any person with whom an alleged insane person may reside or at whose house he may be, or the father or mother, husband or wife, brother or sister, or the child of any such person, and any overseer of the poor of the town, and superintendent of the poor of the county in which any such person may be, may apply for such order by presenting a verified petition containing a statement of the facts upon which the allegation of insanity is based, and because of which the application for the order is made. Such petition shall be accompanied by the certificate of lunacy of the medical examiners, as prescribed in the preceding section."

Third. The case now has come before a judge of a court of record—that is, a judge of a higher court—and it is his duty to see that a notice of this proceeding is served upon the supposed lunatic one day before an order can be granted; or he may, in his discretion, dispense with such notice personally upon the patient, and direct its service upon a friend of the patient, if he thinks best; but should the judge dispense with the service of such notice upon the patient, he must set forth in full his reason for so doing.

Should the judge desire further information before deciding whether to commit the patient or not to a hospital for the insane, it is within his discretion to call for as many additional witnesses as he desires, or to summon a jury to consider the case. There is practically no limit to the power of a judge to make investigation in regard to the truth or falsity of the statements, or to form his own judgment on the case, independently of them, before signing the commitment of the patient.

The certificate of the examiners in lunacy as to the insanity of any person is, under the circumstances, very strong evidence that such insanity exists; but no judge is obliged to accept such evidence as conclusive, or to order any commitment based upon it if his judgment is against it, and he chooses to accept the responsibility of injury to the patient or community from not putting such patient under restraint and treatment; and upon the blank form furnished by the State commission in lunacy for the commitment of insane people is one entitled "Order of Hearing," a plain indication that the judge may and often will, if he thinks it necessary, have as full and extended a hearing as in his judgment is sufficient to elicit all the facts.

The provisions of the new insanity law would seem to protect the liberty of the individual as fully as any laws can, if they are conscientiously exercised by those intrusted not only with the medical but legal sides of the question; and much of the sweeping criticism which has been made of the law is not, I believe, justified by the facts. On the other hand, some additional trouble which the physicians have found in making the new certificates, it seems to me, is due to the fact that the law is yet new and unfamiliar, and that it really imposes no more difficult service on the physician than in making the former certificate, which was complete and careful in all its provisions; and there ought to be no real difficulty in committing any suitable patient requiring treatment or restraint to some recognized hospital for the insane in the State.

In this paper I am not discussing the safeguards against the unjust detention of patients in institutions, or the comparative ease with which they can release themselves from them wherever the question of their insanity admits of any reasonable doubt. It is enough to say that it would be practically impossible to detain a man who was not obviously insane in any hospital for any length of time, because of the State supervision, the frequent visits of those not connected with the institution, and the large number of people who must necessarily be involved in any conspiracy to deprive a person unjustly of his liberty, which would make any such unlawful detention an impossibility.

The question of commitment to hospitals for the insane is not a new one. Many ways have been tried, from the simplest to the most complex. Illinois had a law, which has since been repealed, requiring a sitting of a jury in the case, even of a woman afflicted with insanity from childbirth in any stage of her malady, before she could receive hospital treatment. The best opinion, I believe, is that a commitment not too complicated, and with some latitude with regard to the extent of public hearings, and with some provision for a short temporary commitment of a patient during an emergency, is about the best that can be done, as it protects the liberty of the citizen, and permits a sick person to receive such medical care and attention as he needs with the least amount of red tape.

A serious difficulty in the new law, to which I have alluded above, is the fact that there is no provision for the temporary care of a case of emergency. If such a case comes to a hospital without a certificate complete in all its parts, the superintendent of such hospital must decline to receive it, unless, on the broad ground of humanity, he takes it in on his own personal responsibility. The former certificate had a provision by which, if two medical examiners of the State had sworn to their certificate before a notary public, the superintendent of a hospital for the insane might receive such patient and detain him for five days, after which, if the physicians did not secure the approval of a judge to such detention, the patient must be set at liberty or re-examined. This provision was not largely used, and principally in cases of emergency; and it met those cases in which a judge was not readily to be found—during the night or over Saturday or Sunday, during the adjournment of courts—and is very much needed at the present time; and it, or some other such provision, should be re-enacted by the present legislature.

Under a strict construction of the present law it may happen—as it has in reality happened—that a demented woman, wandering barefoot through the streets and insufficiently clothed, could not be received in a hospital for the insane, but must be shut up in a station house with drunk and disorderly people until the next day, when her case could be medically examined and she be legally committed to a proper hospital.

RENAL TUBERCULOSIS.

By F. TILDEN BROWN.

(Concluded from page 452.)

I PRESUME some one has made extensive examinations to test the existence of tubercle bacilli in the urines of inmates of hospitals and homes for consumptives, in order to elucidate this question regarding the presence of the bacilli, despite the absence of all urinary symptoms, but I have been unable to get track of any such report.

Since the above-outlined history was written the subject of it has died in the Presbyterian Hospital of acute miliary tuberculosis of the lungs, after an illness of two weeks. He was taken rather suddenly ill early in May, 1896, and sent to the medical side of the hospital with a diagnosis of typhoid fever. It was again of interest to me to determine the source of the tubercle bacilli I had repeatedly found in his urine two years before. A necropsy afforded this opportunity, and I have the pleasure of showing you a picture of the entire urinary tract (Fig. 14), revealing in the left kidney two tuberculous foci communicating by the calyces with the pelvis. Also a similar lesion in the right kidney. The left ureter was dilated in two places, and contained a few minute tubercles. The vesical mucous membrane about the left ureteral opening was conspicuous by the size of its blood-vessels only. Both seminal vesicles had old cheesy deposits. The size and shape of that on the right side caused a marked asymmetry of the base of the bladder and ureteral openings, well shown in the drawing.

Every portion of both lungs was studded with very minute tubercles. The patient's temperature had been almost constantly between 104° and 105° during the eight days he was in the hospital. The urine appeared normal and showed no albumin. It was not then examined for tubercle bacilli.

Whether this fatal attack of pulmonary tuberculosis was instituted by a fresh infection of more highly vitalized bacilli or by self-infection of the very parasites he had so long nourished must be left to inference.

The symptomatology and diagnosis of renal tuberculosis, considered collectively, make up a rather complex picture. For we have to remember that the two channels of access for the disease—arterial and ureteral—will, during the early stages at least, determine two dissimilar sets of symptoms. This invasion by the vascular route may be practically symptomless, or nearly so, until the disease has advanced to the formation of a palpable tumor, or has reached the stage of eruption into one of the calices, which may occur (Fig. 14) at an early stage without preliminary tumefaction of the kidney. Then may be at once presented in a minor degree many of the symptoms which have pertained from the outset to the ascending variety, which latter form of the disease, by careful urinary analysis, always permits of a comparatively easy diagnosis. And here I would insist upon the importance of the recognition of these two different modes of kidney implication in tuberculosis, for the elucidation of which we are mainly indebted to the French school. Unless we keep clearly in mind the possibility of a long-concealed renal tuberculosis of vascular derivation, as well as, on the other hand, the later renal invasion following in the train of more or less protracted exhausting and often agonizing vesical tuberculosis, we shall be at a loss to explain the difference in the symptoms presented by successive cases of urinary tuberculosis, and not infrequently be surprised at a necropsy to find one kidney absolutely destroyed by a pent-up disease, when, during life, the patient gave no noteworthy evidence of such extensive renal trouble, if of any.

A summary of the different symptoms and evidences which have been advanced as in any way conducive to the diagnosis of renal tuberculosis, whether vascular or ascending in origin, will be fairly represented by the following:

The existence of a tumor corresponding more or less accurately to the position of, and evidencing by palpation, a kidney. Such a tumor may or may not be painful to palpation, or it may be the seat of spontaneous pain, often intermittent; the tumor may be a centre from which pains radiate to different parts of the abdomen, to the lumbar spine, down the groin, or into the outer side of the thigh, or even into the opposite and healthy kidney. Again, without the presence of a tumor or an appreciable enlargement of the kidney, some of the symptoms just mentioned, and particularly some which follow, may be found to exist, here given in the reverse order of their significance:

Pallor and emaciation. Œdema of the feet and legs. Reaction to the injection of tuberculin. Albuminuria. Moderate pyrexia. Night sweats. Dysuria. Pyuria with acid urine. Hæmaturia with acid urine. Polyuria. Frequency of urination (thamuria). Turbid urine seen by the cystoscope issuing from a ureter. The finding of tubercle bacilli in that urine which is known to come from one or the other kidney, as when obtained by ureteral catheterism.

Most of these symptoms deserve more than mere mention regarding their relative importance.

Emaciation: This is so eminently a common symptom of general constitutional as well as most acute infectious diseases that it can by itself be of little importance, especially when we recall that very many patients with local tuberculous lesions are for some time, at any rate, surprising illustrations of rotundity and muscle. To a somewhat less degree the same remark may be made of pallor and cachexia. Although this symptom is common to a great variety of other diseases, I have not seen a case of renal tuberculosis where, even in the presence of good muscular development, the color was not open to criticism.

Œdema of the extremities deserves only the same importance attaching to other states of the organism characterized by a more or less early impairment in the quality and quantity of blood, which impairment is apt, especially when aided by gravity, to result in œdema of the feet and legs. In the earlier stages of renal tuberculosis I doubt the existence of this symptom. Even in advanced stages of renal tuberculosis my experience has not led to its notice in more than two cases, and in each, after nephrectomy, and improvement in the pre-existing extreme anæmia, it was scarcely noticeable.

Albuminuria, as a symptom, is much in dispute; but, in the great majority of cases, the reason for this difference of opinion appears to be easily explained. In that stage of either variety of the disease where the tuberculous lesions are in open communication with the urinary tract, serum, blood-corpuscles, and leucocytes mingle with the urine in greater or less quantity in direct proportion to which the boiling and acid test reveals the presence of so-called albumin. Under these circumstances, and in this sense, slight albuminuria is a not infrequent accompaniment of renal tuberculosis.

But where the lesions are still inclosed in the glandular parenchyma—and this may be the case until the greater portion of the organ has been destroyed—the products of degeneration and vascular leakage are not mingled with the urine. The uriniferous tubules and glomeruli which remain undestroyed perform their normal functions, and albuminuria is extremely rare. If it does appear, casts and tubular epithelium being also found will probably mean a distinct form of nephritis incidental to the labor imposed upon the excreting channels by the more pernicious waste products of the entire system. According to Du Pasquier, Lacomb reports a case of death from double renal tuberculosis, and where during life albumin had not existed in the urine. When we can clearly differentiate between globulins and true albumins, not only will this symptom—albuminuria—be definitely settled, but we will have a valuable adjunct in assisting to differentiate a Bright's disease from a tuberculous nephritis.

The Reaction to Tuberculin: Notwithstanding the implicit confidence reposed by veterinarians in this test for suspected bovine tuberculosis, it appears to be of such unstable value, when used for diagnostic purpose in the human race, as to deserve but slight consideration in helping to decide the nature of a renal disease. Could this agent be depended upon, it would be of inestimable value in the very cases—incipient cortical tuberculosis—where nothing at most but vague suspicions can be entertained until the stage of eruption into the pelvis.

Escherich's full report of tuberculin, derived from clinical observation undertaken for the purpose of determining its diagnostic value, must lead us to attach to it rather limited importance. But given a patient with a slightly enlarged or tender kidney, a slight evening rise of temperature, slight polyuria, and perhaps a just perceptible thamuria, and with these symptoms a reaction to tuberculin, one would reasonably suspect a pent-up renal tuberculosis and order the individual climatic and invigorating treatment at once.

Dysuria: Unless there are associated tuberculous lesions of the lower urinary tract, excessive dysuria can not be classed as a symptom of the disease in the kidney, and if the patient is closely questioned, it will be found that a certain discomfort or fatigue incidental to the frequency of urination exists, rather than real pain, although the parts by reason of such constant activity are excessively hyperæmic, and perhaps exquisitely sensitive to instrumental examination or the mildest topical treatment.

Tumor in the situation of a kidney is a notable symptom of the middle and later stages of both varieties of the disease. An enlargement of the organ appreciable through the parietes may occur before an extensive renal tuberculosis starting in the cortex has broken into the pelvis, as well as after such rupture where occlusion of the ureter leads to a hydronephrosis or pyonephrosis. The ascending variety of the disease by urethral occlusion may yield an intermittent hydronephrosis for a long time before the kidney becomes actually infected. Associated with the tumefaction will commonly be noted discomfort on palpation, and attacks of spontaneous local and radiating pain.

But all of these symptoms occur in common with renal neoplasm, renal calculus, and septic and movable kidneys.

Pyrexia and night sweats: Even in the early stages of incarcerated renal tuberculosis, a carefully made temperature record will not infrequently disclose a constant slight afternoon or evening rise, perhaps not so much as half a degree. This symptom, together with a slightly tender kidney, would tend to exclude calculus, but not to so great an extent neoplasm, whereas a septic kidney would be attended with greater extremes of temperature. In the later stage of extensive renal degeneration, whether accompanying an original cortical or ascending tuberculosis, where a state of systemic saturation with waste products prevails, the condition will commonly be accentuated by an afternoon temperature of 103° F. and by night sweats.

The Pulse: During the early stages of disease it can not be possible to detect any change, but when well advanced, the rapid and relatively weak pulse is a more persistent indication of the impaired constitutional state than is the temperature. Particularly is this true of chronic cases.

Polyuria: Almost the earliest establishment of a tuberculous focus in the kidney appears in some cases to cause an excessive glandular secretion, a symptom which, however, is not apt to be noted by the physician, and still less so by the patient. When other causes for it can be excluded—often a difficult matter in polyuria—

we should view with suspicion this symptom as one of considerable value, especially because of its priority.

Pyuria and Hæmaturia: These symptoms we can not, of course, expect unless the renal lesion is an open one. Although tubercle bacilli are classified as essentially non-pyogenic, there will nevertheless be found in all open tuberculous renal processes a certain number of, perhaps very few, leucocytes enough resembling pus corpuscles to be called such. To the sterility of such pus containing urine on ordinary media must be conceded a good deal of importance in welding the chain of evidence. I have seen, however, an excessive renal or ureteral pyuria which, while it showed sterility, was proved by examination of the kidney after nephrectomy to be neither of tuberculous nor of calculous origin, but seemingly to have been caused by peripheral partial obstruction of the ureter by a severe grade of seminal vesiculitis. Because of the strong significance attaching to the sterility of an acid pyuria, it is well, before any vesical instrumentation is practised and contamination of the viscus thus endangered, to draw the urine through a sterilized catheter for culture tests. Of course, the fact of getting a growth of some pyogenic micro-organism does not exclude, although it minimizes, the probability of the disease in question being a tuberculosis. It seems fair to presume that a tuberculosis beginning in the kidney is more apt to be an unmixed infection than is an ascending one.

In this disease of the kidney, associated with pyuria, there is nearly always hæmaturia. The blood may merely be microscopic in quantity, or enough on sedimentation to reveal intermittently a faint pink line overlying the pus, or again, but rarely, a veritable hæmorrhage. The varying grades of albuminuria not infrequently found in tuberculous urine is, as already said, most commonly accounted for by the blood and serum present.

Cases of excessive renal hæmaturia of tuberculous origin without appreciable pyuria or other symptom are not so excessively rare. Such bleedings may occur at considerable intervals—months, or even years—and the individual, without subsequent kidney complaint, finally die of some other disease, or as in a case of mine where, however, a necropsy could not be had to verify this belief, of pulmonary tuberculosis.

The microscopic detection of the bacilli during an attack of severe hæmaturia is difficult, but upon its cessation more favorable conditions pertain, and at this time the search should be most thorough.

It is not out of place to recall here that hæmaturia occurring in children presenting the marasmatic condition commonly accompanying tuberculosis, is quite as apt to be a symptom of advanced scorbutus as of the former disease, just as in adults the hæmaturia is not so uncommonly associated with the renal implication of the malarial organism.

We have finally come to that symptom—frequency of urination (thamuria)—than which none other is so apparent to the patient, or so instantaneously suggestive to the physician. This symptom alone, more commonly than any other, brings the patient to seek professional advice. If the history reveals that this thamuria is equally marked at night, the suspicion of tuberculosis is reasonably increased. In both varieties of the disease, and from the earliest until the final stages, thamuria is a prominent symptom. It must be noted, however, that there are periods during the continuance of the disease when this annoying frequency may have strikingly abated, but even now what there is of it will, in the majority of cases, be just as marked at night, a feature not common in any other disease.

As an interesting exception to what has just been said, I must instance again the case reported and whose urinary organs are represented in Fig. 14. This case of renal tuberculosis gave no subjective symptoms whatever.

When, with the cystoscope, turbid urine can be seen issuing from the ureter which belongs to a somewhat enlarged and tender kidney, and this urine is then drawn from the bladder by a sterilized catheter, or, better still, when with Casper's or Nitze's catheterizing cystoscope we bring this urine directly into a centrifugating tube, we are only one step removed from a positive diagnosis attained when the bacilli are found in this urine by the microscope, or, failing in this, if positive tuberculous lesions follow its injection into guinea-pigs, the cellular tissues on the inner side of the thigh of these animals being the preferable site for making the inoculation. The use of the ordinary bladder catheter for collecting urine for critical examination, particularly when an ounce or more is permitted to flow through it before making the collection, reduces to a minimum the chance of getting contamination from the glans penis, vulva, urethra, or seminal vesicles; but even the precaution mentioned does not wholly eliminate the possibility of error; even while the catheter is in place reflux to the bladder from the vesicles may occur. If there are lesions of the bladder, both the facilities for successful employment of the cystoscope and the deductions to be drawn from ureteral catheterism are more or less impaired.

Besides the lepra bacillus, the only micro-organism I know of which can lead us astray in microscopic diagnosis is the smegma bacillus. The morphology of this parasite, as well as its nearly similar reaction to the ordinary staining method for tubercle bacillus, may, when present, easily be misleading unless generous alcoholic decolorization be employed, as was lately demonstrated by Dr. Tuttle, assistant pathologist of the Presbyterian Hospital, in the case of a patient under the care of Dr. McCosh. Mendelsohn and König relate surgical surprises from the mistaken identity of the smegma bacillus.

The fact that the smegma bacillus is at times about as retentive of Ziehl's fuchsine stain as the tubercle bacillus is during the nitric-acid-solution decolorization of the other elements of the mounting renders it necessary to use strong alcohol as an additional distinguishing decolorizer, either following the acid solution, or a mixture of the two, consisting of three-per-cent. solution of nitro-hydrochloric acid in ninety-five per cent. alcohol, may be applied at once. The urine of women will naturally be more prone to contain smegma bacilli than that of a man, unless the latter has a prepuce which by its redundancy forms part of the urinary channel, or unless, as may exceptionally be the case in either sex, this bacillus acquires a vesical or renal habitat.

Much space has been given to symptomatology, because I believe that, for the well-to-do patient especially, the physician who can make a positive diagnosis in the comparatively early stage of the disease renders more valuable if less brilliant service than the surgeon who, in the same case, at a much later day performs a successful nephrectomy.

In connection with that often misleading symptom, thamuria, I record the importance of looking beyond the bladder for its explanation, even if neither kidney is appreciably enlarged or tender, even if the cystoscope reveals one or several patches of hyperæmia and dilated vessels on the otherwise normal mucous membrane. Still more then suspect disease in the kidney. What such patches are I do not know, but I am satisfied that they are not infrequently associated with renal or ureteral tuberculosis, and after nephrectomy has dispelled the urinary symptoms, these patches do not develop into tuberculous granulations. Being aroused by these spots to the just suspicion of a renal tuberculosis, a successful catheterism of each ureter resulting in the acquisition from one side of normal urine and from the other of urine containing tubercle bacilli, we are in the best position in regard to what should follow.

Any except palliative treatment for the renal implications of generalized acute miliary tuberculosis is, of necessity, excluded from consideration.

In a broad sense, all other grades of the disease, ostensibly renal, may be classified for preliminary treatment under two heads, a monetary basis being the dividing line. The rich will, as a rule, find their best resource in change of climate, careful attention to hygienic details, selected alimentation, and medicinal invigoration of the system. The poor, during the early stage of their malady, will receive greatest benefit from a treatment which approximates as nearly as attainable that just advocated for their more fortunate fellow sufferers. And here I would say that, even when the poor man has to earn a still poorer livelihood in some invigorating climate, he is apt to gain by the change a degree of health which the best medical and surgical treatment of the city would fail to effect.

Theoretically, the earliest manifestation of a localized renal tuberculosis in either of these classes would be best treated by a radical surgical operation; but I believe practical experience has pretty clearly shown that the temporary impairment of vitality attendant upon nephrectomy is of more disastrous import than is the presence of an early tuberculous lesion and the bacilli causing it, for a coexisting lesion elsewhere in the body, even if not active, may be pretty generally inferred to exist, and any depleting step at this time, when the system is not fortified, endangers the powers of resistance to a further and more rapid dissemination of the disease. On the other hand, if this small active tuberculous focus in the kidney is recognized comparatively early, and the individual is in a favorable state for operation, a successful nephrectomy will at once undoubtedly place such a one in the most fortunate position. But because a number of these very early cases can by other than surgical measures approximate a cure, it is generally right to allow this opportunity if not to encourage it before operating.

The measures referred to will be briefly outlined from my experience with such cases.

During the summer months I recommend camp life in the Adirondacks; living in a perfectly dry and well-ventilated log cabin; sleeping in light, loose flannel garments. The avoidance of fatigue during the day and getting wet. The use of creosote in gradually increasing doses until from sixty to eighty minims are taken daily.

During winter, the continuance of outdoor life in Asheville, or some piny district on the same elevated range farther south.

Those who can not leave the city can hope for at least temporary benefit by observing the remaining suggestions just referred to.

The following may be told in illustration of climatic influence:

In April, 1892, Dr. Trudeau kindly received at Saranac a patient in an advanced stage of right-side renal and genito-urinary tuberculosis. This man had had the disease for about three years when I saw him. Surgical measures were out of the question, and even a change of climate seemed hopeless. During the day he could retain his urine for but fifteen minutes at a time, and at night he wore a rubber bag because the urine escaped without his knowledge and continuously while he was asleep. He had been in Saranac about two months when his daily intervals had increased to two hours, and he threw away his night urinal. Besides this functional improvement, appetite and weight had increased, and tubercle bacilli were much less numerous in the urine. Before he left New York I could always find several minute cheesy particles which afforded a nearly pure culture of myriad bacilli. Although later, during his sojourn in Saranac, he had two severe crises, once when the other kidney, and again when the left lung or pleura became involved, he rallied from each in fairly good condition, and was feeling comparatively well when, after fifteen months, he insisted upon coming back to New York to work. Three days after arriving he lost his appetite, and thamuria, hæmaturia, and night sweats again appeared. Tuberculous lesions developed on the tongue, and he died within a month.

I will not detain you with the recital of several cases of surprising improvement if not recovery consequent on following the course outlined above, but pass at once to the consideration of the surgical treatment of renal tuberculosis.

We all know that in the earliest stages of renal tuberculous invasion there are met at times exceptional examples, in which the environmental treatment, even if the patient can avail himself of its every detail, must be temporarily delayed until some urgent surgical indication has first received attention—in one case, the sudden appearance of a marked pyuria with fever, together with the discovery of an enlarged and tender kidney in an individual who, up to this time, had not been conscious of ill health; in another case, the sudden onset of severe renal hæmaturia with moderate fever, the hæmorrhage causing the formation of clots in the renal pelvis and ureter, and being passed with pain simulating that of renal colic due to gravel or calculus.

When such unusual symptoms mark the initial stage of the recognized disease, even if an appreciable active or healed focus exists elsewhere in the body, provided it is not in the other kidney, nephrectomy is in general not only legitimate but strongly indicated.

A good example of this was the sudden recognition of a well-advanced but pent-up renal tuberculosis occurring in the service of Dr. Eliot.

A woman of forty-three was admitted to the Presbyterian Hospital with fracture of the right femur. A carefully taken history, physical examination, and urinary analysis gave no indication of past or existing urinary affection. Two weeks later, the patient, being still in bed with the nearly normal temperature noted since admission, suddenly developed afternoon pyrexia of 103°, pyuria with frequency of urination, and tubercle bacilli were found in the urine. Palpation revealed a slight tenderness and some enlargement of the right lumbar region. Nephrectomy yielded a large kidney with multiple cheesy cavities, only one, and the largest of which, had recently broken into the pelvis and caused the symptoms described. The sudden pyrexia, in connection with the eruption of a shut-up tuberculous focus, is interesting, and, I think, a novel observation.

Another class of cases where prompt operation should be resorted to as soon as the disease has been diagnosticated is that in general where the individual has had every environmental and medicinal advantage—still the tuberculous focus in one kidney is advancing, and, by the collective symptoms due to its activity, appetite, strength, and weight are failing, the size of the kidney, pyuria, pain, and febrile state are increasing.

The same resource is more urgently in order for the hospital poor under approximately similar conditions.

The following illustrates such a case:

A woman of twenty-six entered the Presbyterian Hospital complaining of thamuria. Examination showed also pyuria with acid urine, sterile on ordinary media; tubercle bacilli were found by the microscope and guinea-pigs inoculated with the urine developed tuberculous visceral lesions. Cystoscopy revealed some small but distinct patches of hyperæmia; suprapubic pressure caused pain; palpation of the lumbar regions was negative. Vesical irrigation with weak potassium permanganate solution, creosote medication, and improved hygiene effected some little benefit during the next year. At times there were considerable intermissions of the original discomfort, but a constantly increasing pallor and a more haggard expression were noted. All the subjective symptoms were still vesical and urethral. Lumbar palpation now elicited slight pain on the *left* side, radiating to the thigh. After a disappearance of eight months she called me to find her bent over with a large and painful tumor in the *right* lumbar region, and a fluctuating mass over the appendix. Entering the hospital in a most deplorable condition, Dr. McCosh opened an abscess which pointed in front of the flank; it was post-peritoneal, and had come forward from an eruptive lesion through the cortex and capsule of an immense tuberculous kidney. This he at once removed, after evacuating its necrotic contents, which distended the organ beyond the median line. Immediately after the nephrectomy the distressing vesical symptoms ceased. Within the past two weeks I have seen this patient. Now, nearly one year since the operation, she has gained many pounds, is free from any ostensible symptoms of tuberculosis, and is able to take up housework again.

This case may serve to emphasize the frequency of only vesical symptoms when the kidney alone is tuberculous, and to illustrate the long immunity to the specific disease which the rest of the urinary tract enjoys to infection by the descending bacilli—in this respect like the alimentary canal of phthisical children, who so constantly swallow their tuberculous sputum with relative impunity.

The cases in which hopes of radical surgical treatment by nephrectomy would not be entertained are, in general, those where, in addition to an unquestionable focus in one kidney, the lower urinary tract is positively involved; where the other kidney is probably affected, although the seat of a lesser grade of disease; where, in the male, the prostate, seminal vesicles, or testes are involved, and in the female the bladder, peritonæum, Falloppian tubes, or ovaries; but even in these cases where the chief focus of offense is clearly located in one kidney, and the natural drainage by the ureter is wholly inadequate, nephrectomy, if only as a tentative measure, may be legitimate under conditions impossible to classify. A rapid and great temporary improvement follows at times.

In these same hopeless cases of multiple lesions, when natural ureteral drainage is wholly checked by occlusion of the duct, prompt nephrotomy has been advocated in the past. Although at times the operator must be satisfied with this temporizing resource, I believe that, if anything is done, nephrectomy should be advised and prepared for. The idea of effecting complete removal of the organ and closure of the sinus with greater ease and safety at some time after nephrotomy is apt to be fallacious.

Again, these same apparently hopeless cases may be the subjects of exhausting renal hæmorrhage, which sometimes can only be adequately treated by nephrectomy.

To within a few years European statistics have shown the mortality in kidney operations to be surprisingly high. From a long observation of such cases in the private and hospital practice of New York surgeons, I have been satisfied that these Continental figures of thirteen-per-cent. operative mortality in nephrotomy and one of thirty per cent. in nephrectomy would be at the present time a shocking result here. By the kind permission of Dr. McBurney I have had access to the surgical histories of the Roosevelt Hospital, and thus am able to add its statistics of thirteen cases to those of the Presbyterian Hospital, numbering fifteen, since 1893—a total of twenty-eight nephrectomies: Two deaths occurred, a mortality of only 7.1 per cent. I have not limited the operation to those done for tuberculosis, since that would greatly curtail the table, and besides, I believe the operative mortality for this disease should be, and is, as low as any other condition requiring the operation. The reason for this opinion is, in brief, that the more chronic the disease calling for nephrectomy, provided the other organ is fairly sound, the more favorable the operative prognosis, since the more or less functionless gland has long compelled its fellow to do the work for two. As a class requiring nephrectomy, there is none more chronic than the tuberculous.

In 1893 Facklam reported on the statistics of renal tuberculosis the almost incredible mortality in nephrotomy of sixty per cent., and one none too flattering for nephrectomy, of twenty-eight per cent.

A year later Vigneron, with a feeling that Facklam had too generously combined the general with the operative mortality in reporting on nephrotomies which he (Vigneron) rather favored, presented the entire matter, up to that date, with fuller details than the subject had before received.

He cites fifty-four cases of nephrotomy with a general mortality of 38.18 and an operative mortality of 12.72.

He cites the following statistics of different compilers regarding nephrectomy:

1. *Abdominal Nephrectomies.*—Tuffier, 11 cases—mortality, 26.3; Facklam, 13 cases—mortality, 30; Vigneron, 19 cases—mortality, 26.84.

2. *Lumbar Nephrectomies.*—Tuffier, 45 cases—mortality, 28.2; Facklam, 75 cases—mortality, 28; Vigneron, 65 cases (primary)—mortality, 40; Vigneron, 20 cases (secondary)—mortality, 35.

McBurney has recently urged the value of intravenous hot saline infusion for combating the suppression of urine, so commonly a dangerous attendant upon kidney operations. If subsequent trials reaffirm his striking instance of the efficacy of this simple procedure, even the present death-rate must be materially reduced, although neither of the two deaths recorded in the following table could have been averted by this measure, since one was caused by anuria due to complete cystic degeneration of the remaining kidney, and the other by sepsis.

Statistical Table of Twenty-eight Nephrectomies performed at the Presbyterian and Roosevelt Hospitals since 1893.

Presbyterian Hospital	15	No deaths.
Roosevelt Hospital	13	Two deaths.
Total	28	
Males	12	
Females	16	
Youngest	11 years.	
Oldest	56 "	
Average	28 "	
Tuberculous kidneys	9	One death sixth day, suppression. Transperitoneal operation. Necropsy showed remaining kidney wholly cystic and small.
Pyonephrosis	7	
Septic lesions in cortex	2	
Hydronephrosis	2	
Calculus and degeneration of kidney	2	
Rupture of kidney	2	One death on fourth day, high temperature. Transperitoneal operation.
Abscess of kidney, following rupture	1	
Cystic kidney	1	
Chronic diffuse nephritis	1	
Extraperitoneal nephrectomies	17	No deaths.
Transperitoneal nephrectomies	10	Two deaths.
Total deaths	2	
Mortality	7·1	

With regard to the operation of nephrectomy, I will only refer to the primary incision, noting that it is of prime importance to give each case the benefit of thought as to the mode of approach best suited to its particular requirements.

Shall it be by an intraperitoneal or extraperitoneal route?

If the former, shall it be transmesenteric or transmesocolic?

If the latter, shall it be lumbar or transverse?

It is so commonly necessary to enlarge in one direction or another the primary incision giving access to the kidney, that the resulting wound may be of almost any shape, and to attempt a distinct classification of these would be quite useless, if possible. On the other hand, it seems advantageous to have a name for the four well-recognized lines of primary access to the organ, whatever deviations the subsequent exigencies of the case may render expedient.

1. The lumbar incision. Approximating a vertical incision at the outer border of the erector spinæ muscle, extending from below the last rib to near the crest of the ilium, a wound more commonly made for nephrorrhaphy than any other operation on the kidney.

2. The transversalis (lateral) incision. Starting at a point more or less beyond the outer border of the erector spinæ muscle, and extending obliquely downward and forward toward the anterior superior spinous process of the ilium, and perhaps curving upward toward, to, or beyond the umbilicus.

Associated with this incision is the usual practice of stripping the parietal peritonæum from the lumbar and transversalis fascia, with the intention of giving space and at the same time not opening the peritoneal cavity. If torn, immediate suture will restore the protecting properties of this membrane.

This incision is commonly used, and I think advisedly, for the majority of conditions which require nephrectomy, particularly where the kidney is known to have purulent contents.

3. The transmesocolic incision starts ordinarily as a vertical one for two inches along the linea semilunaris, thence obliquely downward and outward half an inch or more below the border of the ribs to the point of parietal attachment of the colic peritonæum. Here the mesocolon is divided vertically and the kidney capsule exposed. This incision appears to me most advantageous in cases of contracted, firmly adherent, and highly situated kidneys. As the ribs are lifted forward and upward, an excellent chance is given the hand to effect separations, and subsequently to reach the pelvis and ureter for palpation, or the parts of the pedicle for ligation.

The risk of peritoneal soiling must be admitted. If the kidney is large, thin-walled, and purulent, the soiling will be pretty certain to occur to some extent; if these conditions do not pertain, the intraperitoneal gauze or sponge compresses about the mesocolic incision will be sufficient to protect the serous cavity.

The relatively small size and essentially one-sided position of this particular wound offers but an indifferent opportunity to examine the other kidney, a feature of the intraperitoneal incision which, done even in a more favorable location, permits one to do little more than verify the impressions derived from extra-abdominal palpation, although what can be learned as to the state of the ureters or the presence of stone in the pelvis, and so indirectly of the kidneys, must be appreciated. In addition to the small adherent kidney, requiring nephrectomy, this approach might be suitable to those cases of rupture and penetrating shot wounds where ocular inspection and the least possible handling may be the determining factor in saving the kidney, or afford suitable space for its removal.

4. The transmesenteric incision has its initial step involving more or less of the linea semilunaris with a central point about opposite the middle linea transversa. When the omentum is drawn aside, the mesentery is adjusted over that part of the kidney—usually the pedicle—which it is desired to reach most directly. After this adjustment of the mesentery, the vessels crossing the line of incision here receive double ligatures. This operative approach is generally of most value in cases of large renal neoplasm, where quick and secure ligation of the renal vessels is of paramount importance to the position, size, or character of the wound through which the organ is delivered—a right-angled extension into the loin probably serving for this purpose. But in a number of cases of very large kidneys, due to whatever cause, the colon will have been crowded toward the median line; consequently a mesocolic or transverse (extraperitoneal) incision will give easier access to the pedicle as well as being the ready-made wound of exit for the organ.

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ON PURPURA HÆMORRHAGICA.*

By LEONARD WEBER, M. D.

THE paper on purpura hæmorrhagica which I have the pleasure of reading before you this evening is based upon the clinical observation of two interesting cases, by which I hope to show that this aggravated form of purpura, first described by Werlhof in 1775, depends upon a most singular and transitory hæmorrhagic diathesis, either caused by infection from without or, as my own cases may prove, from within, and that, by its sporadic and, so to speak, spontaneous occurrence, it is already differentiated from scurvy, hæmophilia, and such efflorescences of purpura or petechiæ as develop sometimes in the course of certain acute and chronic disorders—*i. e.*, symptomatic purpura.

The main signs are hæmorrhages into the tissues of skin and mucous membranes as well as bleeding of their free surfaces, and in very severe cases hæmorrhagic exudates in the serous cavities; relapses are frequent. In ordinary purpura the petechial exanthema is generally small and not extensive, hæmorrhages or bloody exudates are absent, but relapses are equally frequent, and the course of the disorder is often protracted. With or without general premonitory symptoms numerous petechiæ appear upon the surface, generally many more on the lower than the upper half of the body.

The eruptions are like those of purpura, but larger, often confluent into large ecchymotic patches, usually level with the skin, though in the case of S. a good many showed a little above its level. After successive eruptions the whole body assumes a speckled appearance, with colors ranging from purple to yellow.

Sooner or later, sometimes at the very beginning, as the first prominent symptom of the disease hæmorrhage into the tissues of skin and mucous membranes and bleeding from the free surface of the latter take place. There may be severe epistaxis, hæmatemesis, hæmoptysis, hæmaturia, melæna, and uterine hæmorrhage. Cases like the one recently reported by Dr. Moscowitz, with large hæmothorax or hæmopericardium or sanguinolent exudates in the peritonæum, are unusually severe and very rare.

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* Read before the Section in General Medicine of the New York Academy of Medicine, December 15, 1896.

High temperature is usually absent, but there is often a little fever. There is neither much suffering nor general disturbance when the patient has previously been robust, and the disease runs its course without serious loss of blood, and convalescence may be looked for within three to five weeks. It is different, however, when severe hæmorrhage occurs, or a large hæmothorax is produced, as in Dr. Moscowitz's case. Then we shall have the symptoms of severe anæmia and prostration with dropsical swellings and eventual collapse that may even terminate fatally. Though such collapse will cause much anxiety to the physician as well as the patient's friends while it lasts, it is well for us to bear in mind that we can generally overcome the threatening symptoms by the liberal use of excitants, with saline injections, rectal or hypodermic. Cases of this kind, like some of typhoid with similar symptoms, are often amenable to proper stimulating treatment, and allow us to say words of hope and confidence to the anxious friends. But they are also of considerable scientific interest, inasmuch as they show that we are able to re-establish the almost abolished circulation in and function of the central nervous system by the free and protracted use of excitants, and so preserve the life of vital organs. By the free use of excitant drugs I mean here the half-drachm doses of hypodermics of ten-per-cent. solutions of oleum camphoratum or caffeine and sodium salicylate.

That such cases require a much longer time to recover in than the ordinary ones is self-understood.

Occasionally "urticaria" runs along with or complicates purpura; it was so in S.'s case, but it gave no particular trouble. In the autopsies of purpura hæmorrhagica, ecchymoses and erosions of mucous and serous membranes in the various organs may be seen, also hæmorrhagic infiltrations, but exudates are rare. Inflammatory changes and fibrinous deposits, as in scurvy, are here absent; the spleen has been found enlarged sometimes; specific alterations of the blood or capillaries or smaller vessels have not been demonstrated, so far as I am aware. By the high fever and other symptoms that accompany typhoid and hæmorrhagic variola and scarlatina, it will probably be easy enough to distinguish these from hæmorrhagic purpura.

It is to scorbutus, perhaps, that Werlhof's disease bears the greatest resemblance, and there have been some who have called it acute scurvy. But the hæmorrhagic inflammation and ulceration of the gums, pathognomonic of scurvy and the primary symptom, is always absent in purpura; besides, the latter occur in persons who have previously been healthy or nearly so, while scurvy is a more or less chronic cachexia affecting persons who are poorly fed and in bad conditions and surroundings.

With regard to the ætiology of the disease, I regret to say that we are considerably in the dark as yet, though it seems to be a well-observed fact that the disease is relatively frequent in the convalescent period of acute infectious diseases, particularly typhoid. It has been seen more often in young than in old persons, and women appear to be more frequently affected than men.

From my own observation of various cases of purpura, I am inclined to agree with Professor Immerman, who considers ordinary forms of purpura simplex to be the rudimentary, and purpura hæmorrhagica the aggravated, form of Werlhof's disease, both being the same in kind, but differing in degree.

If the toxines of indigestion can induce an attack in a person who is afflicted with a constitutional disorder like diabetes, then the case of patient G. S. has significance in that direction; my second case, that of B. C., had a previous uncertain history of malaria, but the patient had a mouth full of decayed teeth, from which direct and indirect infection of the system may have taken place. She has had three attacks in the course of three years, the last one without hæmorrhage. In the case seen by Dr. Moscowitz the patient had had about half a dozen attacks of gonorrhœa, which may have run him down and produced a predisposition to purpura.

With a generally favorable prognosis we may institute treatment with confidence. Rest in bed; careful guarding against all traumatic influences; good, plain diet; cool, light drinks; no stimulants except when specially indicated, and thorough evacuation and regulation of bowels are the main things.

Of liquor ferri sesquichlorati, five drops several times daily, I believe to have seen good effects in both cases. Fluid extract of hydrastis in hæmorrhage has been found useful by some observers. Severe epistaxis and other hæmorrhages that can be controlled must be treated by the usual topical applications. In collapse, stimulants and excitants as mentioned above.

I will now proceed to report briefly three cases, two of my own and another by Dr. Moscowitz, of this city.

CASE I.—C. S., aged fifty-two years, married, merchant, father of healthy children; no hereditary or acquired taint. Severe case of typhoid about twenty years ago; thrombosis of certain veins of lower extremities followed by development of varicose veins, which he keeps under control by wearing stockinet bandages, and is perfectly comfortable in that way, being able to be about the greater part of the day. He is quite stout, not gouty, but for about five years has been afflicted with glycosuria, his urine generally showing one to two per cent. sugar when he does not observe careful diet, going up to five per cent. when he indulges. S. presented himself first on January 3, 1896, on account of slight tonsillitis, that passed off within two days. January 7th, about three days after some very great indiscretion in eating and drinking, followed by the usual discomforts of indigestion on the part of stomach and bowels with slight temperature, he observed small and large purpura spots on inner sides of both thighs, and remembered to have had a slight attack of purpura, accompanied by rheumatoid pains, some six or seven years before. The next and following day the disease spread rapidly over lower extremities, abdomen, and back, the efflorescences literally covering the entire back, and confluent in many places, with many hæmorrhagic infiltrations of the cutis. In the second week the disease invaded arms and chest and face, but less so than below; however, in reaching the conjunctivæ, it came to considerable bloody suffusions and œdema palpebrarum, and during the night of the twelfth day acute auricular hæmatoma developed, causing some discomfort. While there had not been any troublesome symptoms thus far and very little fever, there was much more discomfort when the eruptions appeared in the mouth. They occasioned some surface bleeding and considerable œdema of soft palate and surrounding parts, interfering to a slight extent with the patient's respiration. There never was hæmatemesis or melæna; the loss of blood from the mouth was trifling. Appetite rather good, bowels constipated; urine contained six per cent. sugar at the outset of sickness, but by strict diet soon was brought down to less than one per cent.

There being considerable circumarticular pains and some œdema of both knees at the beginning of the illness, he was ordered fifteen-grain doses of salicylate of sodium four times a day during the first week. It did no good as to relieving these symptoms, and, the disease spreading rapidly and increasing in severity, he was given five drops of the liquor ferri sesquichlorati every three hours during the day from January 15th to February 5th, and less often after that up to March 1st. About February 27th patient appeared to be over the attack, but February 3d a relapse set in, much less severe than the first attack. In the second week of March all symptoms had disappeared.

Between the 20th and 30th of January I observed an intervening attack of acute urticaria which annoyed him considerably while it lasted. For nearly three weeks the patient had to be kept in bed, and three weeks more in his room.

April 17th I saw him last, when his urine showed just a trace of sugar. For some weeks he had been taking elixir ferri and citrate of quinine, and was then preparing to go to Europe for recreation. He is reported to be in good health now and fully able to attend to his business, which necessitates frequent and extensive traveling.

(Photographs of the patient were shown.)

Case II.—Bridget C., aged twenty-four years, single, servant, no hereditary or acquired taint; came to me first January 7, 1895, and said that she had been two years in this country; lived during the last two summers with a family in the Highlands of the Hudson. Had malaria there, and believed she had it now, though no enlargement of spleen could be demonstrated. About a year ago had purpura of skin and mucous membrane of mouth, with considerable bleeding from the mouth—probably from the gums; was in hospital for four weeks; took ergot while there. She had now some purpura spots with light symptoms of general malaise. All the patient's molar teeth were in a bad state of decay; gums somewhat swollen and bleeding on slight provocation, as in scurvy, but there was no ulceration of them; patient's general condition and nutrition good enough. Excluding malarial poison as the possible cause of purpura, I considered it probable that the bad condition of her teeth gave rise to direct and indirect infection of the blood, and the production of such toxines as might be inducing the disease in question. I had to send the patient to the hospital again a few days after her visit, to be taken care of for two weeks. She did not lose much blood during this attack. Two weeks ago she came to my office again with slight purpura of face and arms; mouth and gums not affected. I insisted upon her going to a dentist to have stumps removed and such other dental work done as might eliminate all further infection from this source.

Case III.—Dr. Moscowitz presented a patient with the history of purpura hæmorrhagica before the German Medical Society of this city at their regular meeting in November, 1896. A man, aged thirty-three years, whose father died of carcinoma ventriculi, had no history except frequent gonorrhœa; last attack in April, 1896. Purpura spots in June with considerable hæmaturia on June 20th that passed off quickly. On July 4th he felt well enough to attend a baseball game. Taken with fainting fit and severe pain in left thorax while on the grounds. Acute development of enormous hæmothorax on left side with severe collapse symptoms. July 5th, also the signs of air in thorax, besides the blood. Some hæmatemesis during the following days; apathetic condition, slight fever.

July 15th.—Removal of eight pints of bloody fluid, mixed with air, by aspirator.

August 12th.—Another pint of the same fluid was taken away. Gradual recovery, interrupted only by slight epistaxis.

With regard to the presence of air in the thoracic cavity, Dr. Moscowitz is of the opinion that there must have been some purpura efflorescences over the left pulmonary pleura, one or the other of which led to a slight laceration of the surface of the lung and the subsequent escape of air. There being no previous history of any lung disease whatever in the case, this explanation appears to be satisfactory.

No one so far has demonstrated a germ pathogenic of purpura, or found out the particular toxines which in a previously healthy individual will induce the peculiar blood or vascular or nerve change that will produce the disease. Nevertheless, we are pretty well agreed that some intoxication of the system from within or without must take place in order that such remarkable tissue alterations may be made. I do not believe that glycosuria had much to do with Mr. C. S.'s purpura, for among more than sixty cases of glycosuria and diabetes which I have observed I failed to notice a predisposition to well-marked purpura in such patients. But the debauch he had been guilty of a few days before the attack occurred may have been productive of gastro-intestinal ptomaines that had sufficient virulence to cause the disease in a person who was evidently predisposed to it. Again, Bridget C. has had unusually bad teeth and more or less diseased gums for years, was not able to masticate her food, and swallowed for a long while quantities of purulent and putrid material with the food with which to produce chronic self-infection.

Case III shows nothing but a history of frequent gonorrhœas. None of the cases related go to prove that the supposed auto-infection was the cause *per se* of purpura, and we are obliged to make use again of the old makeshift predisposition as a *sine qua non* in considering the value of other and direct influences.

As to names, forms, and kinds of purpura, I really believe them to be one in nature but different in degree. We may and probably will go on speaking of purpura rheumatica, though rheumatism has nothing to do with it, and the disease is not influenced by salicylates or alkaline treatment. Articular and circumarticular pain and swelling, due to acute œdema of integuments, etc., are often seen in simple purpura, and it is probably these that have given rise to the supposition of rheumatism being connected with purpura. With the names simple, petechial, and hæmorrhagic purpura the entire field can be covered, I think.

Purpura patients may have been previously well, and again may have some diathesis and been exposed to depreciating and reducing influences for a time. No characteristic changes in heart or vessels or nerves have been found, nor is it likely that we shall make much progress that way so long as we know nothing of its pathogenesis. It is pleasant to know that the prognosis of the disease is good, and that even in such desperate cases as No. 3 life need not be despaired of. Cases like that, also Case I, show how important it is to keep the patient quiet in his bed and his room until the attack has passed off.

In a severe hæmorrhagic case I should prefer the use of liquor ferri sesquichlorati to that of any other remedy.

25 WEST FORTY-SIXTH STREET.

A PRELIMINARY NOTE ON THE INVESTIGATION AND PREPARATION OF THE ANTITOXINE OF THE BUBONIC PLAGUE AT THE NEW YORK QUARANTINE LABORATORY, STATEN ISLAND.

BY CHARLES B. FITZPATRICK, M. D.

AT the request of Dr. A. H. Doty, health officer of the port of New York, I began, on the 17th of February, 1897, a series of experiments in order to investigate, and if possible to prepare, the antitoxine of the bubonic plague. Dr. Doty had had constructed for this purpose a laboratory on Swinburne Island, so that the work might be carried on in an isolated quarter. I used a culture of the bacillus of the bubonic plague then in the bacteriological laboratory of the New York city health department, which had been obtained from Dr. Yersin by Dr. Ezra Wilson.

This bacillus was found to be a short, plump rod, staining at the end and remaining unstained in the middle zone. The bacillus usually occurs singly. When obtained from bouillon cultures, however, it frequently forms in chains. When injected into mice and guinea-pigs in a sufficient quantity to cause death, the bacillus was found in pure culture in the blood and internal organs. When the mouse remained alive several days after the inoculation the glands were found in some cases to be enlarged. The culture grew at both room and incubating temperatures.

The culture was moderately virulent. An inoculation, by means of a small amount on the end of a platinum needle introduced under the skin of a mouse weighing fifteen grammes, caused death in thirteen days. The intraperitoneal injection of two and a half cubic centimetres of this culture caused the death of two guinea-pigs in twelve hours. The weight of these guinea-pigs was three hundred and four hundred and fifty grammes respectively. The culture obtained from the autopsies upon the two guinea-pigs showed a marked increase in virulence. The hypodermic injection of one and a half cubic centimetre caused the death of a guinea-pig weighing three hundred and fifty grammes in twelve hours. Half a cubic centimetre of this same culture killed a mouse of twenty grammes in four days. The culture obtained from the autopsy on this mouse was extremely virulent. 0.05 cubic centimetre of this culture, when introduced hypodermically into a mouse weighing fourteen grammes and a half, caused death within twelve hours.

The bacillus, when grown in fluid blood serum, which contained a sufficient amount of blood pigment to make it red, became more virulent than when grown for the same period in peptone solution or bouillon. Five-per-cent. glycerin-agar is also a good medium for this bacillus.

The animal employed to produce the antitoxine serum was a horse. A goat, a sheep, and a dog are also being employed for the same purpose. The treatment of the horse began on February 26, 1897, with an injection of the living culture sufficient to cause a rise in temperature of 2.6° F. and considerable local reaction. This was followed in six days by a second injection, which caused a rise of 4° F. Five days after this injection the inoculation was repeated with a reaction of 4.2° F. On the eighteenth day of the treatment five hundred cubic centimetres of blood were drawn. The serum which was obtained from this blood was tested as follows:

A mouse weighing fifteen grammes and a half was inoculated with 0.05 cubic centimetre of a bouillon culture (0.05 cubic centimetre of this culture killed a mouse of fourteen grammes and a half within twelve hours), and three hours after received an injection of one and a tenth cubic centimetre of the serum. This mouse has remained alive and well. As a control on this test, a mouse weighing seventeen grammes was inoculated at the same time with the same amount of the culture, and this mouse died in about twenty-four hours.

Several other mice infected by a deadly inoculation of the culture were treated with this serum, and, although they lived several hours longer than those which received no treatment, the serum was not sufficiently strong to cure. In two mice inoculated twelve hours after receiving one cubic centimetre of the serum, infection was prevented.

The horse was subjected to further inoculations with the virulent living cultures of the bacilli, and the same precautions were taken as in the preparation of diphtheria antitoxine (2). The blood was drawn again upon March 28th and April 1st. The serum obtained from the blood drawn upon these dates was tested as follows:

Nine guinea-pigs were inoculated with a fatal dose of a living culture of the bacillus of the bubonic plague at the same time and under exactly the same conditions. Six of the guinea-pigs were afterward injected with one cubic centimetre of the serum. The three others were left without any further treatment. The three guinea-pigs which received no further treatment died within forty-eight hours; four of the six others have remained alive and well. The details of these tests may be indicated as follows:

Guinea-pig No. 1, weight two hundred and sixty-six grammes, was inoculated with two and a half cubic centimetres of the culture, and in an hour and a half afterward received one cubic centimetre of the serum.

Guinea-pig No. 2, weight three hundred grammes, was inoculated with two and a half cubic centimetres of the culture, and in three hours afterward received one cubic centimetre of the serum.

Guinea-pig No. 3, weight three hundred and seven grammes, was inoculated with two and a half cubic centimetres of the culture, and in six hours afterward received one cubic centimetre of the serum.

Guinea-pig No. 4, weight two hundred and eighty-five grammes, was inoculated with two and a half cubic centimetres of the culture, and in twelve hours afterward received one cubic centimetre of the serum.

Guinea-pig No. 5, weight two hundred and sixty-eight grammes, was inoculated with two and a half cubic centimetres of the culture, and in twelve hours afterward received one cubic centimetre of the serum.

Guinea-pig No. 9, weight two hundred and ninety-seven grammes, was inoculated with two and a half cubic centimetres of the culture, and twelve hours afterward received one cubic centimetre of the serum.

Guinea-pigs No. 6, No. 7, and No. 8, weighing two hundred and sixty-eight, two hundred and ninety-five, and three hundred and twelve grammes respectively, were also inoculated with two and a half cubic centimetres of the culture at the same time as the other five, and received no serum.

Guinea-pigs Nos. 2, 3, 4, and 5 have remained alive and well.

Guinea-pig No. 6 died in twelve hours after being inoculated.

Guinea-pig No. 7 died in eight hours.

Guinea-pig No. 8 died in thirty-seven hours.

Guinea-pig No. 1 died in three days.

Guinea-pig No. 9 died in four days.

Similar experiments were made upon eight mice. In these it was found that the one cubic centimetre of the serum cured one of the two mice which had received one cubic centimetre of the serum an hour and a half after the inoculation with the culture. The other mouse which received one cubic centimetre of the serum an hour and a half after the inoculation with the culture remained alive one day longer than the controls. The remaining mice all died at about the same time as the controls.

Tests were also made on three mice and three guinea-pigs with this serum to ascertain whether the serum, when injected twelve hours before an inoculation of the culture, would prevent infection. The amount of the living culture used in each case was sufficient to cause death. In these experiments infection was prevented in two of those which had received an injection of one cubic centimetre of the serum twelve hours before the deadly inoculation with the culture.

These experiments and tests indicate that the serum of this horse, which has been repeatedly inoculated with the virulent culture of the bacillus of the bubonic plague, is able to both prevent and cure the bubonic plague.

The strength of this serum approaches that employed with success by Yersin in India. Yersin (1) writes that "in order to cure the mice, which had been already inoculated with the bacillus for twelve hours, it was necessary to employ from one to one and a half cubic centimetre of the serum" which he employed to cure the bubonic plague in man.

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April 5, 1897.

THE PATHOLOGICAL FACTORS OF NEURASTHENIA.*

BY HENRY L. ELSNER, M. D.,

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IN considering the subject under discussion, I must be allowed to place myself upon record against the assumption that we have in neurasthenia an independent disease. Increasing experience with nervous diseases, a more careful study of the pathologic changes which modern histology permits, with a thorough appreciation of the advances recently made in the minuter structure of the nervous system, all tend to relegate many of the so-called functional disorders to oblivion, and place the complex of symptoms known to physicians under the term neurasthenia upon a scientific basis.

The term neurasthenia may be conveniently considered synonymous with the German *Nervenschwäche*, or nerve weakness. It means simply an anomalous condition without substantial disease discoverable in nerve structures, in which we have all the evidences of weakened nerve force, tendency to exhaustion, lack of reserve, increased irritability, with, in the majority of cases, mimicry of organic disease, with a radiation of symptoms to parts distant from the supposed disorder, depending largely upon the self-suggestibility of the patient. If you will allow me, after having formulated this definition, to present an original thought, I will advance the theory that in the majority of cases we have in neurasthenia a complex of symptoms, as a rule dependent upon some constitutional or local fault magnified and exaggerated by a self-suggestion. What this underlying fault is, must be discovered, and in the majority of cases can be detected by the painstaking physician. My theory of auto-suggestion finds strength in the fact that patients with these forms of nervous mimicries have minds which are not ordinary. Consider for a moment the histories of your cases, and among them you will find neurasthenia occurring in patients with unusual mental characteristics, minds in which there is something notable, "good or bad, higher or lower, than the average—something outstanding or sunken." It always adds to the probability of a disease being nervous when there is a train of far-reaching neurasthenic symptoms, "with an unusual mental character, predominance of its emotional part, so that under emotion or with distracted attention many things can be done or borne which in the quieter mental state are felt as if impossible or intolerable." This condition is associated with a mind set upon some supposed grave organic disease from which the patient can not alone be divorced; the ego is always in the ascendency, there is constant reversion to self, and a continuous auto-suggestion is practised.

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* Being a part of a discussion before the Syracuse Academy of Medicine.

This neurasthenic condition or nerve weakness is neither a modern disorder nor is it to be considered a purely American disease. The symptoms of this condition were known to the ancients, and Hippocrates describes diseased conditions which resemble it. Beard and Bouchut made no new revelations in medicine when they described this condition, for mention is made of affections associated with kindred conditions by Sydenham, Robert Whytt, Raulin, and Pomme in the last century, while Hasse, in a work published in 1855, published cases which were taken entirely from a German *clientèle* and pictures conditions like those described by Beard much later.

We begin, therefore, in considering the chapter which has been assigned to me in this discussion, with the firm belief that neurasthenia is not a disease *per se*, but a complex of symptoms which may accompany a variety of disorders, in some of which the true pathologic condition can be demonstrated, in others the change takes place in the ultimate elements which build the nervous system and can not be exactly localized or even detected. This latter statement brings me to the consideration of the neuropathic tendency or diathesis. Fortunate indeed is the child born of parents whose lives and judgment have not suffered from the baneful influences of modern civilization—those influences which are constantly at work, undermining our strength and creating the higher degenerates of this *fin-de-siècle* period. In other words, heredity is an all-important factor in many of these cases of so-called neurasthenia. The neuropathic tendency, with weakened resistance and abnormal nervous development, must, of necessity, be imparted to the offspring of those whose habits and modes of life are in direct antagonism to all that is healthful and uplifting.

Such influences will early lead to an inability to shake off the minor ailments to which the child and youth are subjected, and ultimately every depressing factor has its accompaniment of neuromimesis. The patient is not "willful" but truly "will-less."

A careful study of the family history of many of these cases brings out predisposing causes which can not be ignored, and which, in turn, tend toward true mental insanity or to the development of an egotism which brands the modern neurasthenic, and makes it impossible for him to be anything but self-centred.

Faulty hygiene, improper education and environment are potent factors in the production of these new disorders, which, without grave organic change, are associated with neurasthenia. In those predisposed to neuroses there is no more potent factor in the production of the neurasthenic condition than idleness—want of occupation. The unoccupied man has only self to consider; beginning with a minor ailment, his mind dwells upon it, and unconsciously he has impressed upon his higher psychic centres the great importance of his malady, and its imaginary gravity has taken possession of him. Have you found many neurasthenics among the ordinary laboring classes? Has the poor but busy housewife, with every moment occupied, become an exacting neurasthenic? It is among the more cultivated and not the more rugged society that we see these cases, where luxury, idleness, and the faults of modern civilization are at work to make us the least resisting and the most nervous people on earth. Judicious occupation brings happiness; this, in turn, a sound mind, with normal functional activity in all organs—organs possessed of resisting power ready to fight disease when it attacks the victim. The overworked stock-broker or the fatigued physician becomes neurasthenic in proportion as the emotional element in each develops and his nerve cells are changed.

There are changes in nerve cells which no microscope can discover nor the most painstaking pathologist can detect. Yet no clinician of to-day would consider persistent and even fatal Jacksonian epilepsy a functional disorder because the lesion had escaped discovery.

Now let us see how we can reconcile our theory with the clinical varieties of neurasthenia as given by Beard. In Beard's work he says: "The body is a bundle of reflex actions. An irritation in any one part is liable to produce an irritation in some other part, the nature and locality of which will depend on the degree of irritation and the constitution of the individual. This is true of all parts of the body, on the surface and beneath the surface, and of all organs, including, probably, the brain and spinal cord, injuries to which may be transmitted to other portions of the body, or to other portions of their own substance, indirectly as well as directly. There are certain organs, however, which, on account of the abundance and complexity of their own supply, and the indispensability to life and the perpetuation of life, are pre-eminently centres or foci of reflex irritation. Among the most conspicuous of these reflex centres are the stomach, the digestive apparatus, including the liver and intestines, the prostatic urethra, the uterus, the ovaries, and the eyes.

"Some of the clinical varieties of neurasthenia derive their names from the fact that one organ or set of organs are more particularly involved in some cases than in others, and, either as causes or effects, are the chief avenues of suffering, and require special treatment and hygiene.

"Next to the stomach the prostatic urethra is probably the most important centre of reflex irritation of the body. There is every reason, physiological and anatomical, why it should be so, and a close study of the symptoms of nervous debility proves that it is so. A morbid state of this part of the body is both an effect and a cause of nervous exhaustion; for, on the one hand, it is impossible for one to have an irritable prostate and yet be in good health in other respects; and, on the other hand, it is impossible for one to suffer from nervous exhaustion for a long time and not suffer in the prostatic urethra.

"Neurasthenia, therefore, like insanity, is divisible into a number of clinical varieties. These varieties receive their names from the part of the body especially affected, or from the causation or other important facts in the clinical history, just as in the classification of insanity.

"The classification of neurasthenia that I have been accustomed to use, and which has been proposed and employed in part in writings on the subject for a number of years, is as follows:

"Cerebral neurasthenia (cerebrasthenia, cerebral exhaustion).

"Spinal neurasthenia (myelasthenia, spinal exhaustion).

"Digestive neurasthenia (nervous dyspepsia, or neurasthenia gastrica of Dr. Burkart).

"Sexual neurasthenia (sexual exhaustion).

"Traumatic neurasthenia (traumatic exhaustion).

"Hemi-neurasthenia (hemi-exhaustion).

"Hysterical neurasthenia (hysterical exhaustion)."

True, Beard is correct in stating that "the body is a bundle of reflex actions." But the irritation at the distant point will depend entirely upon the extent of the primary change, the nervous mechanism, and the degree of the patient's resistance.

True, again, there are certain organs which on "account of abundance and complexity of their own supply, and the indispensability of their functions to life and the perpetuation of life, are pre-eminently centres or foci of reflex irritation." These are, according to Beard, "the stomach, the digestive apparatus, including the liver and intestines, the prostatic urethra, the uterus, the ovaries, and the eyes."

With the neurasthenic condition pointing to any one of these organs we to-day discover a true underlying fault associated or not with the neuropathic habit.

In those forms which Beard described under the head of "cerebral neurasthenia, cerebrasthenia, or cerebral exhaustion," we have discovered the graver forms of cerebral hyperæmia, active or passive, changed circulation from distant pressure, abnormal blood states, cardiac asthenia, faulty metabolism or assimilation, including the various poisonous effects of toxines, ptomaines, the uricacidæmia, oxaluria, phosphaturia, and a variety of other abnormal conditions, which time and patient study of individual cases will detect.

The "spinal neurasthenia" is more likely to be associated with excesses in venery, changes in the generative, particularly urinary organs, constitutional disturbances, or some of the numerous causes mentioned in connection with cerebral neurasthenia. The statement made by Beard that "it is impossible for one to suffer from nervous exhaustion for a long time and not suffer in the prostatic urethra" is as absurd as it is unscientific. I know of no authentic case which can be cited to prove the truth of this statement.

The digestive neurasthenia of Beard must always be associated with faults in the secretory, motor, or absorptive function of the stomach. Thanks to the study of these functions, by the examination of the stomach contents we have learned to give each abnormity its proper significance, and can readily explain the accompanying neurasthenic condition.

The sexual neurasthenic is at once a difficult and trying patient to consider. In many of these cases there is primarily some change in the urethral canal or deep urethra resulting either from excessive venery or long-continued masturbation. Influenced by a debasing literature which is continually flooding the country, these unfortunate patients ultimately find themselves more hypochondriacal and melancholy than neurasthenic. Once in this condition it requires the strongest influence of an honorable profession to overcome the effects of unceasing self-suggestion. It is here that the "personal equation" of the true physician makes itself felt for good. Lead these patients from darkness to light and you will remove from hundreds of homes a gloom which is ofttimes as depressing to the household as it is enervating to the victim.

The traumatic neurasthenia of Beard in all probability corresponds with our more recent traumatic neurosis. Upon this subject and upon its pathologic fundament volumes have been written. If there is such a disorder as traumatic neurosis it will be found in the neuropathic individual, whose nervous system is abnormally impressionable, where "litigation symptoms" are continued by a self-suggestion beyond the patient's control, owing to the perverted cerebral action. This is a charitable view to take of these cases. They will be found only rarely. At the present time we can not deny the possibility of their existence.

The hemi-neurasthenic type, with its one-sided paresis or anæsthesia, is dependent upon grave but incipient cerebral disease as a rule. The subsequent histories of these cases prove the truth of this statement, for many end with advanced paralysis and well-marked symptoms, making an exact anatomical and pathological diagnosis possible.

The study of the remaining neurasthenic conditions can with profit be left to those special departments of our art in which the refinements of diagnosis have done so much to place medicine upon a scientific basis.

The evenly balanced ophthalmologist, the otologist, the rhinologist, the laryngologist, the urinologist, the hæmatologist, the gynæcologist, and the many other workers along special lines, will each have a chapter to add to the pathologic factors associated with the neurasthenic state. All will teach these patients to strive "after self-effacement, to aim at some higher ideal than themselves, to find in labor strength, and through suffering tranquillity, and so transfigure their lives to discover therein sacrifice instead of selfishness and gladness instead of gloom."

Therapeutical Notes.

Cochineal in Whooping-cough.—Dr. Naegeli (*Centralblatt für Kinderheilkunde*, 1897, No. 2; *Therapeutische Wochenschrift*, March 7, 1897), who seems to have revived the use of this old remedy, gives the following formula:

℞ Cochineal in very fine powder,	from ¾ to 7½ grains;
Ammonium carbonate..	" 15 " 30 "
Syrup of orange............	6 fl. drachms;
Distilled water..............	to 3 fl. oz.

M. A teaspoonful every two hours.

Anæsthetization of the Deep Urethra.—According to Dr. P. Scharff (*Centralblatt für die Krankheiten der Harn- und Sexual-Organe*, 1897; *Gazette hebdomadaire de médecine et de chirurgie*, March 14, 1897), the best way of anæsthetizing the deep urethra is by a rectal injection of an analgetic solution such as the following:

℞ Morphine hydrochloride...	4½ grains;
Atropine sulphate........	0.15 of a grain;
Distilled water......	1,500 grains.

M.

From two to five cubic centimetres of this solution, says the author, injected into the rectum, are enough to induce complete insensibility of the deep urethra, so that sounds may be passed and other instruments used without pain.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M.D.

NEW YORK, SATURDAY, APRIL 10, 1897.

THE TRADE IN ANTITOXIC SERUMS.

An amusing article signed by M. Lutaud, one that we are not inclined to take very seriously, appears in the *Journal de médecine de Paris* for March 21st. It seems that they are not very happy at the Institut Pasteur, for the commercial phase of the enterprise of producing antitoxic serums is not quite satisfactory. Not only, says M. Lutaud, does the modest practitioner remain lukewarm toward a method of treatment which is most generally imposed upon him by his patient, but a combination is seriously threatening the products bearing the stamp of the rue Dutot. If, he continues, it was Behring who invented the method, it is Roux that has been its propagator and it is the Institut Pasteur that has marketed it, with the well-organized touting of *Figaro* and the *Petit journal.*

But, lo and behold, Behring wants his share of the cake. Following Roux's example, he seeks to make and sell serum, and he has the audacity to pretend that his products are equal if not superior to those of the rue Dutot. Not only does he desire to furnish serum to Germany, but to Belgium and Switzerland also, and even to Italy, hitherto a vassal of the Institut Pasteur. It is even thought that he will make bold to put it on the French market, too. Moreover, he would create in Berlin an international institute where all the serum products of Europe should be made or controlled under his, Behring's, direction. This project, that threatens the very foundations of the Institut Pasteur, says M. Lutaud, seems already to have been entered upon; the German savant, who has an understanding with the house of Meister & Brunnig, is traveling over Europe and, like the illustrious Gaudissart, placing innumerable bottles. If this propaganda extends to America, says M. Lutaud, the rue Dutot will have no other outlet than France, in which country the consumption has thus far been very meagre. This German competition is all the more terrible from the facts that Germany is already incontestably master of the market for chemical and pharmaceutical products, and that Behring passes for the inventor of the serum treatment.

In the face of such a dangerous situation, the Institut Pasteur has resolved on renewed efforts at publicity, and, as usual, it is the *Petit journal* that has been charged with speaking the good word. See, says M. Lutaud, how they are treating Behring! A few months ago, when he had shown no mercantile inclination, they were willing to own that he had invented the serum treatment and to give him half of the St. Paul prize. Now he is of no account; it was Pasteur, it was Roux, it was Kitasato that invented the serum treatment; there is nobody down to Maragliano (whom last year they were treating as a charlatan) that is not preferred to him. Behring a savant? Never; he is a commercial *attaché* of the house of Meister & Brunnig, and his products are on a par with Frankfort sausages. He does not even know how to make the serum, and his products have no therapeutic value. "If your child has the croup, poor mother, its salvation will be in the hands of the house of Lucius, Meister, & Brunnig, of Höchst-am-Main, the only genuine and authorized producer of the serum under the auspices of the most illustrious Herr Professor Behring!" This quotation, presumably, is from the *Petit journal.* The article then goes on to say that Behring inundated Italy with his serum; but, poor Italians, exclaims the writer, you know not what risk you are running by employing impure and inert products. He then quotes again—in this instance also, we presume, from the *Petit journal:* "The Italians recently had proof that serums of the Behring type were not always beyond criticism. The royal bureau of health of Italy, having had occasion, two years ago, to test a sample of antidiphtheritic serum made by the house of Lucius, Meister, & Brunnig and certified by the German government to be perfect, was forced to the conclusion that this serum did not possess half the antitoxic power indicated by the label." Oh, deceptive label! the writer then exclaims, you indicate a certain antitoxic power, and you keep only half your promise! The child on whom the Behring serum is used is only half cured!

M. Lutaud concludes his half sarcastic, half plaintive article as follows: The complaints of the Institut Pasteur seem to us very just, and we freely join in them. Still, we must pay some attention to how it comes about. You pointed out to Behring, who had no notion of it, the commercial value of his invention; it seems just that he should seek to get a little profit from it. Good or bad, the antidiphtheritic serum treatment is his work; you can not prevent him from selling his products in those European countries in which you yourselves have created an immense vogue for him. It will be in vain for you to invent a new serum every day; it will at once be imitated across the Rhine, and the markets of the world will be flooded, not excepting that of France. As regards France, however, you have the means of defending yourselves. Since the law does not allow of the importation of products that are not recognized in an official pharmacopœia, the importation of all foreign serums should be interdicted, for they do not yet figure in the pharmacopœia.

THE SPITTING NUISANCE.

It does not seem that very much has yet been accomplished by the city board of health's action taken to check the offensive and pernicious practice of spitting upon the floor in public places and conveyances and upon the pavements. We expect, however, to see the board carry its point ultimately, although probably the result will be due to education, persuasion, and the force of example rather than to ordinances. A mania for lawmaking is now on the rampage, and many good citizens seem to really believe that the wicked may be made upright, the unclean pure, and the offensive attractive by means of legal enactments. But the people at large, however silent they may remain, are disposed to resent the present disposition to compel them by force of law to do what somebody else thinks is right and refrain from doing what somebody else thinks is wrong. So we do not imagine that additions to the sanitary code are likely to prove very potent in checking offenses. The transportation companies and the managers of theatres and the like might accomplish more than the board of health appears able to in restricting the vile habit of promiscuous expectoration, and the public would uphold them in the effort.

Twenty-five years ago the great majority of American men, including those of refinement and good breeding, were in the bondage of the tobacco-chewing habit, but that habit has so nearly disappeared that addiction to it is now looked upon as prima-facie evidence of vulgarity among educated persons. The legend "Gentlemen will not spit on the floor," appearing on signs in hotels, in ferryboats, on railway trains, and elsewhere, susceptible as it was of two interpretations, has had its effect. It is not that a new generation has grown up; those who formerly ejected tobacco-juice from the mouth with scant regard for decency if any, now look upon tobacco-chewing with loathing and wonder how they themselves could ever have come to practise it. These men are just as fond of tobacco as they ever were, but they now appreciate the indecency of their former way of indulging their fondness for it. If this has been accomplished in such a short time—largely, no doubt, as the result of women's labor—may we not hope that the time is near at hand when all forms of offensive and dangerous spitting will appear to people in their true light?

MINOR PARAGRAPHS.

THE METHODIST EPISCOPAL HOSPITAL, OF BROOKLYN.

The *Ninth Annual Report,* covering the period from November 1, 1895, to October 31, 1896, is a volume of almost three hundred pages. Most of it consists of the reports of the medical and surgical officers, statistical and casuistic. It is evident that the hospital is doing most excellent work. In his somewhat enthusiastic report, the superintendent falls into a very common error when he says: "To close the century with both our administration building and operating pavilion completed, equipped, and occupied would set the New Year bells of 1900 to ringing in our ears a jubilant *te deum laudamus.*"

THE BILL TO REGULATE DISPENSARY PRACTICE.

The bill to restrict dispensary patients to the really poor, which we print elsewhere in this number, is undeniably founded on the need of correcting a great and onerous imposition upon the medical profession. It is so crude and exacting in its requirements, however, and so faulty in its form that we are glad to learn that it is to undergo decided changes. Perhaps it is not too much to expect that among those changes may be the replacement of "the New York County Medical Society" by the Medical Society of the County of New York, which is the real name of the body that it was probably intended to mention in the bill.

THE PROPOSED DUTY ON MINERAL WATERS.

We hope the petition of physicians in favor of exempting natural mineral waters, which we publish in another part of this issue, will meet with favorable consideration in Congress. The duty on the bottles seems sufficient for both revenue and protective purposes, and our domestic mineral waters have properties so peculiarly their own as not to appear in need of protection.

A NEW JOURNAL OF THERAPEUTICS.

A new semimonthly journal entitled *Treatment, a Journal of Practical Medicine and Surgery,* comes to us from the Rebman Publishing Company, of London. The first number is dated March 11, 1897. The chief editors are Dr. George Johnston, Mr. D'Arcy Power, Mr. R. Lake, and Dr. Hector W. G. Mackenzie. The new journal has a good appearance, and we find the contents interesting.

A NEW CHICAGO JOURNAL.

We have received the first issue, designated as "Nos. 1, 2, 3, and 4," of the *Intercollegiate Medical Journal,* the official organ of the Nu Sigma Nu Fraternity. The number contains fifty-four large octavo pages of reading matter of good quality. The journal is edited by Dr. F. Gurney Stubbs and Dr. Will Walter, for whom it is printed.

ITEMS.

Hospital Governing Boards and Medical Staffs.—The following resolution, recently passed by the trustees of the Polyclinic Hospital in Philadelphia, seems to indicate that in one hospital, at least, the fact that the medical officers are an essential part of the hospital organization is recognized by the authorities, and it is of interest at this time, when the medical press is discussing so earnestly the relation of hospitals to their medical staff and the medical profession in general:

"*Resolved,* That the trustees of the Philadelphia Polyclinic and College for Graduates in Medicine, wishing to show their appreciation of the public services of physicians upon whose skill and faithfulness all successful hospital work depends, order that one of the private rooms in the Polyclinic Hospital be called the Room of the Mutual Aid Association of the Philadelphia County Medical Society, and direct the superintendent to admit to said room without charge any member of the Mutual Aid Association of the Philadelphia County Medical Society who may be sick and require medical treatment; provided, that the officers of said association first certify that the applicant's circumstances require such concession in regard to hospital charges, and that the rules of the hospital in other respects in regard to the admission and duration of stay of patients be observed, and that nothing in these resolutions shall be construed to prevent the use of the said room for other patients at regular rates when it is not occupied by a member of the association named."

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 6, 1897:

Diseases.	Week ending Mar. 30.		Week ending April 6.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	8	1	3	2
Scarlet fever	195	5	178	10
Cerebro-spinal meningitis	5	3	2	2
Measles	197	7	195	6
Diphtheria	244	35	218	44
Croup	13	7	7	8
Tuberculosis	214	119	212	123

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine-Hospital Service:

	Small-pox—United States.		
New York, N. Y.	March 20–27		2 deaths.
	Small-pox—Foreign.		
London, England	March 6–13		1 death.
Bombay, India	Feb. 16–March 2		4 deaths.
Calcutta, India	Feb. 6–20		7 "
Cardenas, Cuba	March 6–13	400 cases,	53 "
Cienfuegos, Cuba	March 7–14		1 death.
Erzerum, Turkey in Asia	Feb. 20–27	3 "	
Genoa, Italy	March 6–13	4 "	
Guayaquil, Ecuador	Feb. 19–March 5		4 deaths.
Hong Kong, China	Feb. 6–20		21 "
Madras, India	Feb. 13–26		7 "
Madrid, Spain	Feb. 24–March 3		7 "
Moscow, Russia	Feb. 20–March 6	10 "	4 "
Odessa, Russia	Feb. 28–March 6	20 "	2 "
Osaka and Hiogo, Japan	Feb. 20–27	36 "	19 "
Paris, France	Feb. 20–March 6		3 "
Rio de Janeiro, Brazil	Feb. 13–20	2 "	
Sagua la Grande, Cuba	March 6–13	4 "	1 death.
St. Petersburg, Russia	Feb. 28–March 6	4 "	1 "
Trieste, Austria	Feb. 20–March 6	12 "	1 "
Warsaw, Russia	Feb. 20–27		5 deaths.
	Cholera.		
Calcutta, India	Feb. 6–20.		16 deaths.
Madras, India	Feb. 13–26		7 "
	Yellow Fever.		
Para, Brazil	Feb. 28–March 6		9 deaths.
Rio de Janeiro, Brazil	Feb. 13–20	21 cases,	6 "
Sagua la Grande, Cuba	March 6–13	11 "	3 "
	Plague.		
Bombay, India	Feb. 16–March 2		1,470 deaths.

A Cook Tour to the International Medical Congress.—The following circular letter, signed by several prominent Chicago physicians, has been sent out:

CHICAGO, *March, 1897.*

"DEAR DOCTOR: It is believed that a considerable number of American physicians will visit the Twelfth International Medical Congress to be held in Moscow, August 19–26, 1897. As all those who wish to attend the congress have a common objective point, it is thought that they can be associated to advantage in one or more excursion parties. In this way the social features of the trip will be enhanced, and each individual will be surrounded by those who are personally congenial. By such association better accommodations can be secured and at a considerable reduction in price. Additional security will also be attained, as parts of the trip, which include comparatively unfrequented routes of travel, will be under the charge of a traveling director who is thoroughly conversant with the languages and customs of the countries visited.

"As there will doubtless be some divergence as to choice of routes, depending on individual inclination and previous opportunities for foreign travel, several routes have been selected. By reference to the accompanying itinerary it will be seen that in these, although separate for a portion of the journey, the principal points are visited together.

"Final arrangements are in the hands of the well-known tourist agents, Thomas Cook & Son, thus affording ample guaranty that the tour will be satisfactorily conducted.

"Yours very truly,

[Signed.]
"NICHOLAS SENN, M. D.,
"CASEY A. WOOD, M. D.,
"HAROLD N. MOYER, M. D.,
"EUGENE S. TALBOT, M. D.,
"D. R. BROWER, M. D.,
"J. B. MURPHY, M. D.,
"D. A. K. STEELE, M. D.,
"B. T. WHITMORE, M. D."

A pamphlet descriptive of the itineraries may be had by addressing Messrs. Thomas Cook & Son, No. 261 and No. 1225 Broadway, New York, or No. 234 South Clark Street, Chicago.

The Avoidance of Annoying Reflections in the Use of the Ophthalmoscope.—At a recent meeting of the Section in Ophthalmology of the College of Physicians of Philadelphia, Dr. Edward Jackson suggested a modification of the sight-hole of the ophthalmoscopic mirror, consisting in making the sight-hole merely through the silvering, leaving the glass intact, and then cementing a thin piece of glass back of the sight-hole, extending beyond it on the silvering to protect it from dust. The dust falling upon either surface being easily removed, complete and permanent freedom from the luminous cloud caused by reflections from the sight-hole could be obtained. The plan had been first applied to the mirror for skiascopy, and later adapted to that of the ophthalmoscope.

The Illinois Northern Hospital for the Insane, at Elgin.—We learn from the *Medical Standard* that Dr. John B. Hamilton, late of the Marine-Hospital Service and the efficient editor of the *Journal of the American Medical Association*, has been appointed superintendent of the hospital. We join with the *Standard* in congratulating the State of Illinois on the acquisition of Dr. Hamilton's services

The Buffalo Academy of Medicine.—At the last meeting of the Section in Surgery, on Tuesday evening, the 6th inst., the following papers were to be read: Rectal Prolapse—Rectopexy, by Dr. Herman Mynter; and Gastrostomy: Witzel's Method, by Dr. Eugene Smith.

The Society of Medical Jurisprudence.—At the one hundred and twenty-sixth regular meeting, on Monday evening, the 12th inst., Dr. H. J. Boldt will read a paper entitled Should the State take Action regarding the Administration of Anæsthetics?

The College of Physicians and Surgeons of Chicago, we learn, has recently become legally the Medical Department of the University of Illinois.

Change of Address.—Dr. Albert M. Judd, to No. 107 Sixth Avenue, Brooklyn

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department. United States Army, from March 28 to April 3, 1897*:

MAUS, LOUIS M., Major and Surgeon, will be relieved from duty at Fort Sam Houston, Texas, upon the arrival at that post of DE LOFFRE, AUGUSTUS A., Major and Surgeon, and is ordered to repair to Washington, D. C., and report in person to the Surgeon General of the Army for temporary duty.

CABELL, JULIAN M., Captain and Assistant Surgeon, having been found by an army retiring board incapacitated for active service on account of disability incident to the service, is by direction of the President retired from active service this date, March 29, 1897. He will proceed to his home.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending April 3, 1897:*

GRAVATT, C. U., Surgeon. Ordered to examination for promotion, Washington, D. C., April 5th.

PRIOR, J. C., Assistant Surgeon. Ordered to the Naval Laboratory, New York, and Department of Instruction, April 5th.

COOKE, F. C., Assistant Surgeon. Ordered to examination for promotion, New York, April 5th.

COSTIGAN, G. D., Assistant Surgeon. Detached from the Vermont, April 6th, and ordered to the Lancaster per steamer of April 7th.

MORGAN, D. H., Assistant Surgeon. Detached from the Naval Laboratory, New York, April 6th, and ordered to the Naval Academy, April 8th.

Society Meetings for the Coming Week

MONDAY, *April 12th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private); Maine Academy of Medicine and Science (Portland).

TUESDAY, *April 13th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Medical Societies of Jefferson (quarterly—Watertown), Oneida (annual—Utica), Ontario (quarterly), Rensselaer and Tioga (Owego), N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Bergen (annual—Hackensack) and Cumberland (annual), N. J., County Medical Societies; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Fairfield, Connecticut, Medical Association (annual); Northwestern Medical Society of Philadelphia; Philadelphia Pædiatric Society; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *April 14th:* Southern Kentucky Medical Association (first day—Hopkinsville); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital, New York; Doctors' Club of the City of New York; Tri-States Medical Association (Port Jervis); Medical Society of the County of Albany, N. Y.; Pittsfield, Massachusetts, Medical Association (private); Philadelphia County Medical Society; Kansas City, Missouri, Ophthalmological and Otological Society.

THURSDAY, *April 15th:* Southern Kentucky Medical Association (second day); New York Academy of Medicine; Brooklyn Surgical Society; College of Physicians of Philadelphia (Section in Gynæcology); New Bedford, Massachusetts, Society for Medical Improvement (private); Tolland, Connecticut, County Medical Society (annual).

FRIDAY, *April 16th:* New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Medical Society of Saratoga Springs, N. Y.; Baltimore Clinical Society; Chicago Gynæcological Society.

Births, Marriages, and Deaths.

Died.

JAMES.—In Hingham, Massachusetts, on Tuesday, March 30th, Dr. Joseph F. James.

KINARD.—In Pine Grove, South Carolina, on Monday, March 29th, Dr. G. Allen Kinard.

RICE.—In Biloxi, Mississippi, on Saturday, March 27th, Dr. C. A. Rice, in the sixty-third year of his age.

RICHARDSON.—In Brooklyn, on Monday, April 5th, Charlotte Russell Richardson, wife of Dr. John E. Richardson.

Book Notices.

A Practical Treatise on Diseases of the Skin. For the Use of Students and Practitioners. Fourth and Revised Edition. By JAMES NEVINS HYDE, A. M., M. D., Professor of Skin and Venereal Diseases, Rush Medical College, Chicago, etc., and FRANK H. MONTGOMERY, M. D., Lecturer on Dermatology and Genito-urinary Diseases, and Chief Assistant to the Clinic for Skin and Venereal Diseases, Rush Medical College, Chicago. Illustrated with One Hundred and Ten Engravings and Twelve Plates in Colors and Monochrome. Lea Brothers & Co., 1897. Pp. xxiii–17 to 808. [Price, $5.25.]

THE fourth edition of Dr. Hyde's well-known work presents the admirable features of its immediate predecessor together with the additional matter and the corrections which the progress of dermatological knowledge during the past three years has rendered necessary. That this progress has been ample will become evident to all who make a comparison between the third and the fourth editions of the book. The opinions which we have expressed in the past concerning the merits of this work apply with equal force to the present edition, save only as regards the modernizing and rejuvenation which the text has now undergone. This revision has been done most excellently and to the end that the work shall maintain its high standard of value. The book is exceedingly well arranged and of great completeness, its classification is clear and striking, its style is pointed and rather dogmatic, and its illustrations are, in most instances, well chosen and well executed. The work will undoubtedly continue to be highly esteemed.

Lectures on Renal and Urinary Diseases. By ROBERT SAUNDBY, M. D. Edin., Fellow of the Royal College of Physicians, London, etc. With Numerous Illustrations. Second Edition. Philadelphia: W. B. Saunders, 1897. Pp. xii–434. [Price, $2.50.]

THE published lectures of Professor Saundby upon Bright's disease and upon diabetes have been highly appreciated by the medical profession, and most justly, for they have been in every sense valuable productions. Their publication now in one volume, and marked by such revision and addition as the progress of the past few years has required, is in itself a matter of congratulation. The completeness of the work is enhanced by the addition of a chapter upon miscellaneous affections of the kidney, so that as a measure of its completeness the work now thoroughly deserves its title of *Lectures on Renal and Urinary Diseases.*

The major part of the work is occupied by the presentation of nephritis in its various forms and that of diabetes. Naturally this portion of the work is its most important part, and with it no doubt many of our readers are familiar. The section upon miscellaneous renal diseases, though smaller in bulk, can not be considered unimportant, and indeed it is a worthy companion to the other and older sections. In the newly added section are presented renal calculus, hydronephrosis, pyonephrosis, pyelitis, hæmaturia, and hæmoglobinuria. Such additions amplify the usefulness of the book, and we are of the opinion that the excellent position which the lectures upon Bright's disease and diabetes have achieved in the past should give place only to the superior position the amplified work must attain to.

A Manual of the Practice of Medicine, prepared especially for Students. By A. A. STEVENS, A. M., M. D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Fourth Edition, revised and enlarged. Illustrated. Philadelphia: W. B. Saunders, 1896. Pp. xviii–17 to 511. [Price, $2.50.]

ALTHOUGH it can not be maintained as an abstract proposition that the surest proof of merit is success, yet in most instances success is the result of worth. To say, therefore, that because Dr. Stevens's little work is now in its fourth edition it is necessarily worthy is going too far, however the fourth edition may prove it successful. It may, nevertheless, be said that the work is a good one, provided its limits are remembered, and in the recognition of these limitations there is none more frank than the author.

The work is a condensation of the practice of medicine to a very small bulk, a matter of five hundred pages (of small size), containing what is more commonly offered in fourfold this bulk. As a natural consequence of such condensation the subject suffers, and yet it is remarkable how much is presented, and how usefully. The work has been prepared, as its title-page announces, especially for the use of students, and the preface of the first edition proclaimed it as an outline of the subject only, to be amplified by attendance at lectures and observation at the bedside. We doubt the wisdom of thus teaching so vast a subject and so important a one as the practice of medicine, and rather by far would we have the student read of this subject from less condensed works, reserving such a book as this one for later use as a means to freshen and brighten his knowledge which has been obtained from more exhaustive treatises. All this is no disparagement of the book, for indeed we have already said that it is an admirable one of its class, but it is rather a protest against encouraging the medical student to gather "only what is essential." To know the essentials in the limited and nineteenth-century meaning is suggestive of superficiality, and to the medical man such a tendency is fatal.

As to the fourth edition of Dr. Stevens's book as compared with the third, it is a modernization, and various disorders have received ampler consideration as progress in their study has made possible. Among these, diphtheria, myxœdema, and malarial disease are notable. An appendix has been added which discusses the examination of the blood and of the stomach contents. As an adjunct to a more exhaustive work upon the same subject, the book may safely be recommended.

Annual of the Universal Medical Sciences and Analytical Index. A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M. D., Paris, and Seventy Associate Editors, assisted by over Two Hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromolithographs, Engravings, and Maps. Volumes I to V. Philadelphia, New York, and Chicago: The F. A. Davis Company. [Issue of 1896.]

We have before this expressed our admiration of this annual and our surprise at its remarkable comprehensiveness. The latter characteristic, indeed, we have ventured to criticise as often making for quantity rather than for quality. We note with pleasure, therefore, that in the issue of 1896 editorial precautions have been taken which entirely correct such a tendency and render the contained matter remarkable alike for its exhaustiveness and its high value. The editorial annotations, too, made as they have been by writers whose dicta are respected, complete and enrich the text greatly to our satisfaction and admiration. It has ever been the purpose of the editor of this annual to improve the work from year to year as the means to do so might appear; but we are frank in saying that his efforts have never appeared more brilliantly successful than as shown in the volumes under discussion. In saying this we are far from reflecting upon the issues of previous years, for progress and improvement are certainly the aims of our profession, and progress accomplished is no disparagement to the efforts which have preceded its accomplishment.

The statement so often made for books of the annual class, that they obviate the need of original works and publications—in short, that the abstract or the extract is the equal in value of the original—is absurd, and we are certain that a medical mind thus fed to the exclusion of more nutritious food will be but poorly nourished. Use, however, should not involve abuse, and a yearbook, if reliable and ample, may be an exceedingly valuable adjunct to more thorough sources of information, serving to arrange and present the field of medicine before the eye in panoramic form, as it were, permitting of the closer scrutiny of such parts as specially interest the beholder, and aiding him to their better knowledge, not rendering such closer examination unnecessary. It is this introductory, this adjunct and broadening capacity, which Dr. Sajous's annual fills, and which it fills so admirably; not the mere time-saving function, though that, indeed, is an attribute of no mean value.

Aside from the improvements in its editorial complexion, the mechanical features of the work have been vastly improved, with the result that we must rate this work as one of the utmost usefulness and value.

The Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. 1897. Fifteenth Year. London: Simpkin, Marshall, Hamilton, Kent, & Co., Limited. Edinburgh: Young J. Pentland. New York: E. B. Treat. Pp. lxxv–851. [Price, $2.75.]

The *Medical Annual* for 1897 will be received with satisfaction by a large number of medical men, for, though there is no small number of works of this general variety, there is none which has proved more serviceable and reliable. That the publication is a favorite one is evident, and we have many times spoken in its praise when noticing the issues of previous years. For the present issue it is sufficient to say that it is the equal of its predecessors.

The Yearbook of Treatment for 1897. A Critical Review for Practitioners of Medicine and Surgery. By Various Contributors. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. vii–480. [Price, $1.50.]

As the preface of this year's issue of the *Yearbook of Treatment* very truly says, the work is now "so well known as to make a formal introduction to readers superfluous." That this acquaintance of medical readers with the annual is associated with great appreciation of it is also true, for in the field which it covers there is no work more thoroughly useful and satisfactory. Many things combine to render the work serviceable: its small bulk, its completeness, its excellent arrangement, and the evident discrimination with which material is chosen and sifted in its preparation. Some few editorial changes have taken place within the past year, but the volume under discussion may safely be said to maintain the high standard of excellence set by its predecessors.

BOOKS, ETC., RECEIVED.

A Treatise on Cholelithiasis. By B. Naunyn, M. D., Professor of Clinical Medicine in the University of Strassburg. Translated by Archibald E. Garrod, M. A., M. D., F. R. C. P. London: The New Sydenham Society, 1896. Pp. xi–197.

The Yearbook of Treatment for 1897. A Critical Review for Practitioners of Medicine and Surgery. By Various Contributors. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. vii–480. [Price, $1.50.]

An Account of the Life and Works of Dr. Robert Wait, Author of the Bibliotheca Britannica. By James Finlayson, M. D., Physician to the Glasgow Western Infirmary and the Royal Hospital for Sick Children, etc. With a Portrait. London: Smith, Elder, & Co., 1897. Pp. 46. [Price, 3*s.* 6*d.*]

Handbuch der Gynäkologie. Bearbeitet von E. Bumm, Basel; A. Doderlein, Leipzig; H. Fritsch, Bonn; K. Gebhard, Berlin; O. Kustner, Breslau; H. Lohlein, Giessen; W. Nagel, Berlin; R. Olshausen, Berlin; J. Pfannenstiel, Breslau; A. von Rosthorn, Prag; R. Schaeffer, Berlin; J. Veit, Leiden; F. Viertel, Breslau; G. Winter, Berlin. In drei Bände. Herausgegeben von J. Veit, Leiden. Mit zahlreichen Abbildungen. Wiesbaden: J. F. Bergmann, 1897. Pp. vi–3 to 814.

Die Bösartigen Geschwülste des Kehlkopfes und ihre Radicalbehandlung. Dargestellt auf Grund einer von der medicinischen Gesellschaft in Toulouse preisgekrönten Arbeit und einer in den Jahren 1894–1896 unternommenen Sammelforschung. Von Dr. Johann Sendziak, aus Warschau. Mit 10 Abbildungen im Text. Wiesbaden: J. F. Bergmann, 1897. Pp. 240.

Das Interferenzprinzip als Grundprinzip aller Energieverwandlung und aller Entwickelung. Von Dr. Hallervordent, Privatdozent in Königsberg. Würzburg: A. Stubers, 1897.

Hynotism in General Medicine. A Few Suggestions from Personal Experience. By J. T. Eskridge, M. D., Denver, Colo. [Reprinted from the *Western Medical Review.*]

Symptoms of Speech Disturbances as Aids in Cerebral Localization. By J. T. Eskridge, M. D. [Reprinted from the *University Medical Magazine.*]

Dr. Brown-Séquard. By Isaac Ott, M. D., Philadelphia. An Introductory Address to the Students of the Medico-chirurgical College of Philadelphia, October 1, 1896. [Reprinted from the *Medical Bulletin.*]

Contributions to the Physiology and Pathology of the Nervous System. By Isaac Ott, M. D. [Reprinted from the *Medical Bulletin.*]

Acute Lead Poisoning in an Infant, with a Report of Two other Interesting Cases. By R. Abrahams, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Rheumatismus Neonatorum. By R. Abrahams, M. D. [Reprinted from the *Medical Record.*]

Appendicitis complicating Pregnancy. By R. Abrahams, M. D. [Reprinted from the *American Journal of Obstetrics and Diseases of Women and Children.*]

On the Systematology of the Bacteria. Dy Dr. C. Fisch, St. Louis. [Reprinted from the *St. Louis Medical Review.*]

Infantile Dysauxesis. By Dr. C. Fisch. [Reprinted from the *St. Louis Medical Review.*]

Can Tuberculosis be Diagnosticated from the Blood? By Dr. C. Fisch. [Reprinted from the *St. Louis Medical Review.*]

Intrabronchial Medication. By Joseph Muir, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Re-infection in Consumption. By Joseph Muir, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Reports on the Progress of Medicine.

SANITARY SCIENCE AND PRACTICAL HYGIENE.

By CHARLES T. CURRIER, M. D.,
ASSOCIATE MEMBER OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS.

Bicycling is physiologically and medically considered by Mendelsohn (*Deutsche medicinische Wochenschrift,* from April 30 to June 18, 1896) in a very thorough manner. The usual warning against overexertion is repeatedly emphasized. While he indicates its dangers, due credit is given to the apparent good results of this fascinating form of exercise, which induces much-needed muscular exertion among many who would spontaneously indulge only very little in the more available and more natural physical exercises, such as, *e. g.,* walking. Mendelsohn lays special stress upon the fact that one is too apt to overdo, and such excess of muscular exertion results in an unhealthful waste of body tissue not compensated for in all cases by food consumed; the excess of waste products, too, may under some organic conditions accumulate harmfully in the system. Bouchard and others have shown that people are thus rendered more liable to succumb to infectious diseases than are those who indulge moderately in the usual work or exercise of everyday life. The accumulation of nitrogenous waste products in those who exercise too severely is a menace to real health. This is seen in the greater liability of such persons to colds and lung diseases. Trophical corneal disorders, that may go even so far as temporary blindness, are reported as due to excessive bicycling. So, too, are various laryngeal troubles, particularly in those who breathe through the mouth when exercising.

The main danger lies in the great strain put upon the heart; cases of sudden death therefrom are cited. The strain when propelling the bicycle at all rapidly up hill is very great upon the right side of the heart, notably when the breathing is not well managed, short breaths being taken [a bad habit], the breath being held and the diaphragm contracted, as is so common with unexpert riders who are striving hard to ride up hill. Thereby less oxygen is supplied to the pulmonary blood. This tends, too, to produce dilatation of the right ventricle. As with other excessive athletic exercise, the compensatory hypertrophy of the heart, with the resultant increase of blood pressure and gradually decreased vascular elasticity, that comes with much bicycling, becomes unphysiological and undesirable after bicycling is abandoned. Then there may result either degeneration of the hypertrophied heart muscles and blood-vessels, or disease of the aorta and the valves may develop. Thus, bicyclers are to be regarded as inferior "risks" by life-insurance examiners. With children, heart disease is still more likely to develop than with adults, especially as the former are even more apt to assume the harmful, bent-over attitude. The young sexual organs are more apt to become injured by the pressure of the saddle and the hyperæmia of the parts. Up to the twelfth year their less rigid bony systems are more prone to undergo deformity. Particularly after acute febrile affections should bicycling be prohibited, because of the increased danger then of heart disease.

For men who are physiologically aged, the tendency to prostatic trouble is aggravated by the pressure of the saddle. Sclerosis of the arteries is unquestionably a contraindication to counseling bicycle exercise. The same may be said of albuminuria at any age, as also of posterior urethral or bladder troubles. Yet gouty and "rheumatic" cases are said to be benefited by moderate indulgence in bicycling; although a more complete and systematic series of observations of such cases is to be desired.

While excessive bicycling may induce pelvic diseases among women, many gynæcologists consider moderate use of "the wheel" a valuable remedy for various derangements of the uterus and the adjoining parts (Flöel, *Deutsche medicinische Wochenschrift,* November 26, 1896).

For the lungs, this exercise is recommended as a useful gymnastic means of aiding the absorption of slight adhesions and other solid sequels of pleurisy. Bronchial catarrhs have been reported cured thereby. Even beginning phthisis (not of acute nature) has been relieved by this means of expanding and ventilating the apices of the lungs, although rowing and also canoeing with the double-bladed paddle must be considered preferable for such cases. In all cases, proper, deep breathing and a correct attitude are to be enjoined. Dust is to be avoided, and, of course, overexertion is harmful. The possibility of hæmoptysis is to be borne in mind.

For emphysematous and asthmatic cases, bicycling is contraindicated.

Although excess in this as in other muscular exercise is harmful, bicycling, like other exercise conducted in moderation and under careful medical control, has proved a remedial agent of value even in heart disease. Its scope as a means of cure is, as Turner has explained (*British Medical Journal*, July 4, 1896), much larger in functional than in organic derangements. He declares that calomel even is inferior to bicycling for the relief of any functional liver troubles. A bicycle used wisely and well works wonders in such cases.

On the Influence of Sugar on Muscular Work, by Stokvis, Mosso, and Harley (*British Medical Journal*, November 23, 1895, pp. 1280–1285). Experimental proof of the beneficial effect of sugar on muscular work is there recapitulated. Muscle is an exceedingly well-provided storehouse, and an engine working at so little expense that eighty milligrammes of sugar (glucose) are sufficient to produce an ergographic result of more than one hundred kilogrammetres. He differed somewhat from the others in holding that no sugar should be added to the daily food to produce work. All other carbohydrates will do as well for the provision of the muscular storehouse with the necessary stock of chemical energy. Harley claimed that sugar is the principal, if not the only, source of muscular activity. The use of sugar as a food increases the power of doing muscular work. Hence it is a most valuable article of diet. Mr. Wray (*ibid.*) cites instances to support the assertion that a man can exist entirely on sugar.

Alcohol and its Immediate Effect upon Digestion have been experimentally studied by Chittenden and Mendel (*American Journal of the Medical Sciences*, February and April, 1896). Wines taken in small amount hardly interfere with gastric digestion. Indeed, the alcohol and possibly other substances present may even increase the rate of digestion. In large quantities wine retards gastric digestion, not so much because of the action of the alcohol and volatile constituents as because of the solid substance present. Unlike whisky, brandy, etc., the digestion-retarding action of wine taken in considerable amount is not at all in proportion to its amount of alcohol. On pancreatic digestion wines exercise more inhibitory action than the stronger alcoholic liquors, and this is because of the acidity of the wine. The same cause tends to inhibit salivary digestion. Malt liquors, in small quantities, do not markedly influence the digestive power of the gastric juice. If in large quantities, their extractives act inhibitorily.

These results apply purely to the chemical processes of digestion. How alcoholic beverages influence the secretion of the juices or the absorption of the products of digestion is not considered in the articles here reviewed. Pure (ethylic) alcohol has little or no action upon the digestive power of the gastric juice, if the beverage contains it in no greater strength than two per cent. of absolute alcohol (or four per cent. of proof spirit). With from fifteen to eighteen per cent. of absolute alcohol present, digestive action may be reduced one fourth or even one third. The quality of the gastric juice and the digestibility of the proteid material tested are, of course, very important. Beyond twenty per cent., the inhibitory effect of alcohol increases rapidly. The digestive activity of pancreatic juice is distinctly retarded by three per cent. of absolute alcohol. Yet absolute alcohol does not markedly influence salivary digestion of farinaceous foods.

Strong alcoholic beverages (whisky, etc.) have an effect determined by the amount of their alcohol. If the gastric juice be vigorous, even ten per cent. of whisky, etc., simply retards gastric digestion only slightly. The same amount may considerably retard a weak digestion. Fusel oil, as an impurity in liquors, does not exercise any deleterious influence upon the proteolytic action of the gastric juice. On pancreatic digestion liquors are quite potent to arrest the digestive process, even more so than is explainable by the presence of a certain percentage of alcohol.

Modified Milk.—A special milk for infants. Cream milk is derived in a simple and satisfactory way by Cautley's method (*Lancet*, January 11, 1896). It is rendered slightly alkaline, and finally pasteurized at a temperature of 160° F. for fifteen minutes. Analyzing mixed cows' milk and accepting Leeds's analyses of human milk as a guide for the modifying process, he found that nearly the counterpart of human milk was obtained by mingling equal parts of mixed cows' milk and of a ten-per-cent. solution of milk sugar, and then passing the whole through a separator adjusted so that the two outflowing streams, of cream milk and of skim milk, are equal. The richer half resembles human milk very closely, having only slightly less of total solids. If cane sugar be employed, as many physicians prefer, instead of milk sugar, the cost is somewhat less. Theoretically, such milk has not quite the same degree of antiscorbutic quality as human milk; the proteids, moreover, are not in the same form as in human milk; the addition of acetic acid, as a test, causing a somewhat coarser curd, which is due to the predominance of caseinogen over lactalbumin in cows' milk. Yet in extensive practical experience, in hospitals and elsewhere, this easily prepared modified milk causes babes to thrive finely. For the use of the youngest infants some dilution is advisable. The separation process has the obvious advantage of removing manure, epidermal scales, and other dirt that enters milk obtained in the usual way.

Modified milk is recommended by Biedert (*Deutsche medicinische Wochenschrift*, May 7, 1896) in much the same practical way that he has urged for a quarter of a century, and he adds some considerations upon attempts to render the albuminous constituents of cows' milk more like those of human milk. He renews his familiar insistence upon the necessity of having only a limited amount of casein in the artificial milk used for babes, whether the milk be modified on a large scale or especially prepared for a single infant. In the latter case, three or four pints of fresh milk should be kept cold in a broad vessel. Then four to seven ounces of ten-per-cent. cream can be skimmed off. Adding to this three parts of water in which sufficient sugar is dissolved, the resulting modified milk has a percentage of 2.5 fat, 5 sugar, 1 casein for the very youngest nurslings. After the third month a very satisfactory mixture is of cream, 220 c. c.; creamed milk, 300 c. c.; water, 480 c. c.; milk sugar, 24 c. c. That gives a percentage of cream, 1.8; fat, 2.8; sugar, 5. Usually the babe can change later immediately from this to equal parts of milk and water, or to two parts of milk and one of water. It is usually best to sterilize the milk and then cool it. A separator gives cleaner and more abundant cream. Because of its indigestibility various attempts have been made to convert the casein of cows' milk into albumose, like the albumin of human milk, yet the results can not be regarded as wholly satisfactory from a practical point of view. Baginsky's expedient of adding egg albumin to cream milk and water seems advantageous for weakly digesting babes. Subsequent steaming of milk into which a considerable amount of ordinary egg albumin is incorporated would tend to produce an unwelcome coagulum. Hence it is best to derive the albumin free of bacteria, and the milk to which it is to be added should be sterilized beforehand.

Butter made from Pasteurized Milk.—Reuss (*Annales d'hygiène publique*, April, 1896) speaks very favorably of the radiator, as it is styled by its inventor, Salenius, of Stockholm. This is an apparatus which prepares butter directly from milk pasteurized at a temperature of 70° C. The French agricultural schools have reported very favorable test results. The butter is very fine, of uniform quality, and keeps very much better than ordinary butter. Furthermore, the yield from a given quantity of milk is greater. The apparatus is simple, easy to manage, and to keep clean. It requires two men to manage it. The upper part is the churn, the lower part the separator, which makes six thousand turns a minute. About a minute is required for the complete conversion of rich milk into butter.

Animal Life does not require the Presence of Bacteria in the Alimentary Canal.—Nuttall and Thierfelder (Hoppe-Seyler's *Zeitschrift für physiologische Chemie*, xxi, p. 109) describe their successful performance of the difficult experiment required to establish this important truth. Pasteur had long desired to undertake the solution of this problem, although he expressed himself as believing life impossible under the conditions. While bacteria have been regarded as essential to digestion, a little observation and thought causes one to recognize that the digestive ferments of a healthy animal are so much more speedy and effective than bacteria in converting food into resorbable matter that microorganisms seem practically unnecessary. Indeed, they carry the process too far to make their scanty benefit a real advantage; for they furthermore evolve useless and more or less harmful products. Such are aromatic acids and volatile fatty acids, phenol, kresol, indol, skatol, urethan, sulphureted hydrogen, etc. Nencki published this view ten years ago, against Pasteur.

Eggs are apt to have bacteria from the beginning. Hence Nuttall and Thierfelder chose a mammal for the experiment, a guinea-pig being obtained by Cæsarean section under strictly non-bacterial conditions. The little brothers and sisters were fed in a similar way, but on unsterilized milk. The subject of the test was first fed twelve hours after removal from the womb, receiving sterilized cows' milk, and every hour, day and night, after that the sterilized meal was repeated. The cleverly devised apparatus is illustrated on the plate opposite page 116. The patience and scientific carefulness of the experimenters can be appreciated only by one who is familiar with such work.

Eight days after its birth the experiment animal had consumed three hundred and thirty cubic centimetres of milk. Expert observers pronounced it lively and perfectly healthy in appearance. Worn out by the exhausting application, the experimenters killed and examined the guinea-pig. The most careful and controlled examination showed a complete absence of bacteria in the contents of the alimentary canal, and no known means of culture test revealed a single germ. The animal apparently increased in weight, although no bacteria were present. Since only milk was used for food, the test can not be regarded as covering the use of vegetable or mixed food.

Formaldehyde Vapor as a Disinfectant.—Roux and Trillat (*Annales de l'Institut Pasteur*, May 25, 1896) tested this practically in a room, with furniture, clothing, etc., scattered about and infected for the test. They recommend an autoclave not more than three fourths full of a solution of formaldehyde to which is added four or five per cent. of a neutral chloride ($CaCl_2$) or other salt that dehydrates. When a pressure of three atmospheres is reached, the vapor is allowed to exude, and within ten minutes will have reached the extreme points of the place to be disinfected, even if the autoclave be placed, as is preferable, outside the room. If left within, as is practicable for a small room of say two thousand cubic feet contents, it can be left to work automatically and then taken out in twenty-five minutes. All apertures should have been closed, just as for sulphur disinfection. To combat the odors of formaldehyde, ammonia, in a flat, open vessel, may be used. As tests of the penetration of the disinfectant vapor into tissues, crevices, etc., advantage was taken of the fact that the vapor of formic aldehyde renders gelatin insoluble, and changes the color of fuchsin from red to blue violet.

The experiments, under entirely practical conditions, showed that disease germs were absolutely killed when exposed freely to the action of the vapor. Dust in the air and upon the walls was almost absolutely sterilized, the disinfectant action being immediate and simultaneous in all portions of the room. The odor lasts for two days, but one may enter the room in a quarter of an hour. Colors and fabrics do not appear to be injured by the vapor.

De Schweinitz states that a calf was "not greatly inconvenienced" by being kept for three hours in an atmosphere containing five per cent. of the gas, and no bad after effects were noticed. Using wood alcohol, burned on asbestus impregnated with copper or platinum or both, one litre of this alcohol, if none be wasted (during conversion by oxidation into formaldehyde), will give five per cent. of the gas in a thousand cubic feet of room space (*Journal of the American Public Health Association*, October, 1896, p. 361).

Bosc (*ibid.*, p. 299) found, by experiments, that the dry vapor of formaldehyde (saturated state) within five hours completely destroyed disease bacteria, and also molds on dry or nearly dry bits of cloth, even though the room disinfected was thirty thousand cubic feet large. Moist bacteria were killed if freely exposed. Dry sputa containing tubercle bacilli were sterilized, also moist sputa if not in great mass. If spread out thin (a millimetre and a half) on cloth, they were sterilized. Clothing, furniture, and other articles exposed to infection must be so left that the vapor shall come into contact with every infected surface or fold. Clothing should be loose and spread on lines. Mattresses and cushions ought to be opened and the filling spread out.

Walter (*Zeitschrift für Hygiene*, xxi, 3) considers formaldehyde only slightly toxic, yet highly disinfectant. It is not irritant or injurious to skin, utensils, furniture, etc., if used in dilute solution. Being very volatile, it disappears readily and inoffensively after use. A forty-per-cent. watery solution is preferred for basis of use. In solution of 1 to 10,000 it completely restricts the growth of disease germs. In one-per-cent. solution it kills bacteria in an hour. Alcohol intensifies this action. In three-per-cent. solution, especially if alcohol be present, it effectually disinfects the hands. The spray completely disinfects rooms. Leather, clothing, etc., are not injured by it. Articles should be exposed to the vapor for twenty-four hours.

Strehl (*Centralblatt für Bakteriologie*, etc., June 4, 1896, p. 785) reports that solutions of formaldehyde are very efficient against bacteria that are moistened thereby. A ten-per-cent. solution sprayed well upon carpets, etc., serves to disinfect them completely. His test of the vapor showed that it was not effective so long as the bacteria tested were in a dry condition! This result is somewhat contradictory to the more extensive experiments of Lehmann, Stahl, Oehmichen, and others.

Vaillard and Lemoine (*Annales de l'Institut Pasteur*, September 25, 1896), making an unprejudiced test for the French Minister of War by using Trillat's apparatus, consider formaldehyde vastly more effective than a sprayed, vaporized solution of corrosive sublimate. It even destroys disease bacteria covered with a thin albuminous coating, as, *e. g.*, tubercle bacilli in dried sputum. Yet it is rather unreliable against spores, and must be considered as purely superficial in its action, not destroying germs sheltered under a layer of fabric or in a fold. Even a thick layer of dust restricts or negatives the disinfectant action. The vapor should always be used liberally, and for more than six hours.

Formaldehyde vapor, therefore, is of prime value chiefly for the disinfection of rooms of which the walls and floors are mechanically clean. It can not supersede steam, nor take the place of steam and boiling water for disinfecting clothing.

Much more penetrative disinfectant quality is alleged for formaldehyde by Robinson (*Journal of the American Public Health Association*, October, 1896, p. 356), who found that it destroyed typhoid bacilli even half an inch deep in sand.

Malarial Disease prevented by Small Doses of Quinine.—Laveran (*Revue d'hygiène*, March 20, 1896, p. 223) reviews the reports of many medical officers in charge of the health of bodies of European and American men exposed to severe malarial influences. His conclusion is that quinine usually proves very potent in preventing or at least mitigating malarial disease, even in very unhealthful localities. Against its use the objection has been made that daily administration of this drug induces attacks of indigestion, and that quinine becomes less potent in a given case if administered habitually, the system becoming habituated to it. Yet these objections are not sound. A dose of from one fifth to three tenths of a gramme a day can be employed for months with impunity. Quinine destroys the causative microbes by its power as a parasiticide. The microbes of paludism that chance to get into the blood of a person who has been treated preliminarily by the small preventive doses, find them a medium wholly or quite unfavorable to their development. At the most, they develop only with difficulty. The daily dose should not exceed three fifths of a gramme nor be less than a seventh of a gramme. Some prefer a dose of one gramme thrice weekly. To procure a rapid absorption, the hydrochloride is preferable to the sulphate, and is better supported. The best time to take quinine is at meal times. The best way is to dissolve it in wine, although cachets or pills suffice. If added to coffee, that precipitates a portion of the quinine.

Water destroys cholera germs in certain Indian streams (as, *e. g.*, the Jumna and the Ganges), according to Hankin (*Annales de l'Institut Pasteur*, March 25 and September 25, 1896). This is because of the presence in the river water of certain acid substances volatile by heating in open tube. This appears to explain why, in India, the cholera never voyages in the Ganges valley in the direction of the current, but always comes up-stream from its cradle in Bengal. Yet the cholera germs increase vigorously in well water of that region. At Agra the Jumna receives filth from the city surface sewers. Yet in a little over twelve miles the bacterial contamination has entirely disappeared. The water from any portion of the stream shows the same bactericidal action upon cholera bacteria, and yet the same water after it has been boiled in the open air or an imperfectly closed tube allows these bacteria to increase twentyfold in forty-eight hours.

Diphtheria bacilli can be very successfully cultivated upon a new medium recommended by Kanthack and Stephens (*Centralblatt für Bakteriologie*, May 8, 1896). It is simple, inexpensive, transparent. It restricts the development of staphylococci and the colon bacillus surprisingly well; and yet it surpasses other media for the rapid cultivation and isolation of the diphtheria bacillus. For the preparation of this culture medium, very fresh ascitic, pleuritic, or other exudative serum is employed, to every hundred cubic centimetres of which two cubic centimetres of ten-per-cent. caustic-potash solution is added so as to convert the serum albumin into an alkaline form that remains soluble on sterilization by heat. To this is added agar (one and a half to two per cent.) that has been softened previously in acidulated water. The mixture is steamed till the agar is completely dissolved. The whole is then transparent and filters readily through coarse paper (in a hot funnel). Then four or five per cent. of glycerin is added and also a half to two per cent. of grape sugar if desired. Then it is poured into tubes and allowed to solidify after steam sterilizing. It is well to test the serous exudation employed by boiling a little in a test tube before adding the agar. If this serous fluid then coagulate because of an unusual excess of albumin, there should be added at least its bulk of distilled water, and the diluted serum then treated as above indicated.

Small-pox and vaccination are especially considered in a recently published work of the royal German Health Bureau. In the ninth chapter are considered the objections made to vaccination, and they are refuted so far as possible. Injury to the person vaccinated occurs very seldom—much less often than the antivaccinationists falsely assert. There is, indeed, a slight danger, as with any wound, especially an infected wound. It is almost always carelessness and disregard of proper precautions that produce the injury. The advantages of compulsory vaccination are much greater than the amount of occasional injury. Without vaccination, probably more than a hundred thousand German children would die from small-pox every year. From 1866 to 1895 there were eleven hundred and thirty-seven deaths from that disease in all Germany. Four fifths of these fatal cases were upon the frontier or in sea-coast cities, where the infection was clearly introduced from without. Of the remaining one fifth most cases were among foreign laborers temporarily residing in Germany. The few slight epidemics were speedily stamped out, because the German people among whom the cases were situated had been compulsorily vaccinated. The neighboring countries, where vaccination was not compulsory, had many more cases. In the years from 1891 to 1893 there were among each million inhabitants only 2.3 deaths in Germany. In French-speaking states the number of deaths was 148; in Belgium, 253; in Austria, 313; in Russia, 836.

Typhoid and Other Pathogenic Bacteria in Water are more readily recognized if the water is heated preliminarily to 45° C. for thirty to sixty minutes, according to Rodet. The majority of students of the question prefer the addition of about 0.7 per cent. of carbolic acid. Either process is regarded as causing other varieties, such as the troublesome liquefying water bacteria, to be destroyed or considerably restricted; while typhoid bacilli, if present, thrive and develop in the usual culture media employed subsequently. Parietti recommends a stock dilution of five parts carbolic acid and four parts hydrochloric acid mixed in one hundred parts of water. This is used for incorporation in varying amounts into the culture gelatin or bouillon, to which a definite small amount of the suspected water is added.

Wittlin (*Centralblatt für Bakteriologie*, November 5, 1896) studied carefully this method. He found it of value, although a less absolute means of isolating typhoid bacilli than Vincent, Chantemesse, and others claimed. Usually three tests were made. In the first, one cubic centimetre of the water in question is added to nine cubic centimetres of two-per-cent. peptone bouillon. In the second, nine cubic centimetres of the water receive one cubic centimetre of twenty-per-cent. peptone bouillon. In the third, ten cubic centimetres of twenty-per-cent. peptone bouillon are mixed with ninety cubic centimetres of the suspected water. Test tubes are used for the smaller amounts (ten cubic centimetres), and from three to seven drops of the dilute acid added. For the one-hundred-cubic-centimetre amounts flasks are employed, and from ten to seventy drops of the dilute acid added. These amounts of acid regularly sufficed to restrict the harmless water bacteria that occur ordinarily. *B. subtilis, violaceus,* and *Proteus* lose their mobility within one day. *B. mesentericus vulgatus* requires twice as long. The disease cocci, *Proteus immobilis,* the various colon bacilli, and also typhoid bacilli throve in the acid carbolized culture media. Even though very few be present, they will develop. Since so many other kinds of bacteria thrive likewise in the presence of the acid, the method is not wholly satisfactory, but still it is of value.

Capaldi and Proskauer (*Zeitschrift für Hygiene,* xxiii, 1896–'97) tested numerous artificial substitutes for litmus milk, which is an important aid in the differentiation of the typhoid bacillus from the colon varieties. The latter produce so much acid by decomposing the carbohydrates of the milk as to cause a distinct reddening of the litmus, while typhoid bacilli cause only a slight acidity and no notable change of color in the litmus. Capaldi and Proskauer made experiments with many artificial substitutes for litmus milk. Litmus seems the best acid-determining agent; for azolitmin and lacmoid are not sensitive enough, while such a sensitive reagent as rosol acid is too readily affected by the slight amount of acid produced by typhoid bacilli, and hence does not answer. Some of the constituents of milk are superfluous, as regards the essentials of a nutrient medium for *Bacterium coli,* and some are less valuable than others. This is still more the case when especial typhoid culture media are considered. Grape sugar, mannit, milk sugar, and mannose favor acid formation by the colon bacillus, but not by the typhoid germ. Mannit (0.1 per cent.) with Witte's peptone (0.5 per cent.) plus mineral salts make a medium that favors growth of both varieties so as to develop the same degree of acidity. If the medium have no proteids, typhoid will grow scantily and give no acid, while *Bacterium coli* will thrive and cause the litmus to change color. Hence, for the test they recommend, as a substitute for the litmus milk, a medium composed of asparagin, mannit, monophosphate of potassium—each 0.2 per cent.; chloride of sodium, chloride of calcium—each 0.02 per cent.; and sulphate of magnesium 0.01 per cent. Distilled water to one hundred per cent. Sterilize by steam for ninety minutes. Then neutralize with normal caustic soda solution. Litmus solution is then added till the color is red-violet. Then sterilize for thirty minutes, the test tubes containing five cubic centimetres. The use of parchment paper held on over the cotton plug by means of rubber rings is recommended. Leave in incubator for twenty hours after introducing the bacilli. Allow to cool to room temperature before examining for change of color.

These experimenters also tried, in vain, to detect a chemical that favored the growth of typhoid bacilli, while restricting or stopping *Bacterium coli* and others. It is of interest to note that corrosive sublimate, in the strength of one part in ten thousand, allowed both to grow; but arseniate of sodium, in the same strength, prevented their growth.

Capaldi (*ibidem,* p. 474) recommends a medium of two per cent. Witte's peptone, one per cent. gelatin, one per cent. mannit (or grape sugar), and a half per cent. each of chloride of sodium and chloride of potassium. The mixture is to be neutralized by ten-per-cent. normal caustic soda solution, then filtered and sterilized. This medium allows typhoid to develop colorless and transparent small colonies in eighteen hours at 37° C. The colon bacillus grows unlike the typhoid. Yet other varieties of bacteria grow also on this medium.

Ubiquity of Typhoid Bacilli.—Elsner's method of differentiating and isolating typhoid bacilli (*Zeitschrift für Hygiene,* xxi, 25) has been tested, practically verified, and approved by Remlinger and Schneider (*Annales de l'Institut Pasteur,* January 25, 1897, p. 55) as well as by others, and therefore his article seems one of the most important of the seven hundred or more that have appeared upon this vexed subject. His simple method appears to be the only reliable one for the almost certain recognition of typhoid bacilli living in water or elsewhere among various other bacteria. Making a thorough and systematic research with hundreds of chemical agents, from resins and oils to animal products and alkaloids, and trying carbolic acid and naphthol, of course, he found that by the addition of one per cent. of iodide of potassium to potato gelatin other bacteria than the typhoid and colon varieties were almost entirely suppressed. The colon bacteria appear and develop into brownish colonies on the second day after they are introduced. Typhoid colonies come more slowly and are small, water-droplike, very finely granular, clear, and transparent. This culture medium is prepared by cooking gelatin with potato maceration (*Auszug*) of one pound of potato to a quart of water. Then normal caustic-soda solution is added till only slight acidity is revealed to litmus tincture. After filtering and sterilizing it receives one per cent. of potassium iodide.

Remlinger and Schneider note that certain other bacteria may develop in this excellent medium, and that some of the colon-bacilli colonies may simulate the typhoid ones. Hence they always checked their tests by use of the microscope and the familiar means of distinguishing typhoid from other varieties, typhoid characteristics being (1) appearance of gelatin cultures, (2) active mobility, (3) many cilia, (4) non-coloration by

Gram's method, (5) gas not produced by bacilli cultivated in sugary media, (6) non-coagulation of milk in which they are cultivated, (7) absence of indol in cultures, (8) acid reaction of whey cultures, (9) peculiar growth on potato, (10) tardy growth in Maasse's solution (asparagin, common salt, malic acid), to which glycerin is added, (11) inability to develop on a culture medium in which typhoid bacillus has already grown, (12) clumping or agglutination seen when typhoid bacilli are added to serum of a horse immunized against typhoid (Widal's procedure). If a bacillus presents all the typical biological and morphological qualities of the Eberth bacillus and is pathogenetic toward animals, but ceases to be so when the animal experimented upon has received a weak dose of the Widal serum, it nowadays seems safe to call the bacillus typhoid.

Employing all these checks upon the bacteria developed on the Elsner medium, these observers detected typhoid bacilli in nine out of thirty-six samples of drinking water from various places, two being from towns where the disease was prevailing at the time. Six were from places where the fever had disappeared. The carbolic-acid test failed to detect any, but the Elsner method showed the presence of a few characteristic bacilli in the water for three months after the last case. In two cases the bacilli disappeared from the water promptly upon the cessation of the epidemics. In the cases where typhoid bacilli were found there were not many other bacteria and the water was chemically very pure.

Thirteen samples of earth and of dust taken from different localities were examined. In seven of these the typhoid bacillus was found. One was from the bacteriological laboratory where these experiments were pursued. Another was from the sweepings of barracks where typhoid had occurred. Out of six general hospital cases that had not ever had typhoid fever or its symptoms the fæces showed the typhoid bacillus in five of the cases. In many other cases bacilli were detected identical with the typhoid bacillus, except as regards their virulence upon animals and their reaction to the specific serum of Widal. Remlinger and Schneider accordingly feel disposed to question the absolute value of the serum test in all cases of typhoid bacilli, reasoning, by analogy, that not all virulent cholera vibrios react to Pfeiffer's serum test. A fair inference is that both these important disease-causing bacilli have several varieties. The more we study bacteria the less evidence exists to support the theory of the invariability of types. This being so, it is reasonable to consider that the typhoid germ is more or less widely diffused throughout Nature. This helps us to explain cases regarded as of doubtful origin, where the usual factor of contaminated drinking water is not demonstrable.

How Long can Typhoid and Other Pathogenic Bacteria Remain Alive in Water?—Klein (*Annual Report of the Local Government Board* for 1894–'95; and *Centralblatt für Bakteriologie*, etc., November 5, 1896) gives the results of experiments made to determine this question. In sterilized distilled water cholera germs died within two weeks. Typhoid seemed to increase at first, then to decrease; but some typhoid bacteria remained alive in distilled water for more than three months. In London water, from the rivers Thames and Lea, sterilized simply by filtration through porcelain, typhoid bacilli disappeared entirely within eighty-five days. In similarly filtered hard spring water they survived somewhat longer than in the river water. Cholera bacilli survived less than half as long as the typhoid in these waters. When only a few bacteria were introduced, they perished sooner than if many were introduced. Very notable is the finding of this distinguished worker: that bacilli of cholera remained alive in unsterilized common London hydrant water for more than forty-two days, in spite of the antagonistic action of the usual water bacteria present! Typhoid bacilli survived only from thirty-six to forty-two days; in hard water from a certain spring, these lived less than five days, while in rain water and well water they lived longer. The *Bacillus coli communis* did not show any greater vitality than typhoid. Klein states that by filtering considerable quantities of various waters and then examining the resultant slime, he has in a number of cases been able to detect typhoid bacilli.

Bubonic Plague—Pest.—Besides recapitulating the discoveries of Kitasato, Yersin, and others previously reported in these periscopes, Petri (*Deutsche medicinische Wochenschrift*, February 4, 1897) has summarized the results of subsequent observations, and has indicated the precautions adopted by various governments to prevent the spread or introduction of this most fatal of diseases. The short, rounded bacillus that is regarded as the causative agent is probably destroyed by drying for four days in diffused daylight. In the direct sunlight, as many hours suffice. Boiling water or steam destroys it very promptly. One per cent. carbolic acid kills it in an hour. For the culture of these characteristic bacilli, a two-per-cent. alkaline peptone bouillon, with two per cent. of gelatin added, is recommended. Rabbits and horses seem best adapted for the production of antitoxic serum, which Monod and Yersin have proved to be curative (Yersin, *Annales de l'Institut Pasteur*, January 25, 1897). Aoyama found that small wounds on the hands or feet were the usual channel through which the infection entered human beings. Climatic and telluric conditions have very little to do with the diffusion of the disease, while infected clothing and other effects, filth and dust from infected abodes are very potent causes. As with other diseases, flies can also transport the plague bacillus. Various domestic animals are susceptible to the infection. Swine become infected by eating rats or mice, and these vermin are frequent carriers of the disease. Since 1720 (in Marseilles) and 1841 (in Constantinople) the plague has not appeared in Europe. It is now prevalent in southwestern Asia and among our antipodes (in China, since 1871). The present epidemic in Bombay began last September to assume terrible proportions. Quarantine throughout Oriental and other ports has been very effective. Austria quarantines all exposed ships till two weeks have elapsed since their departure from an infected port. Food products from such places are destroyed if showing signs of gnawing by rats or mice. Great Britain has set no further restrictions than those of November 9, 1896 ("against yellow fever, cholera, and plague"). Yet it would seem as though somewhat more severe regulations were desirable.

Yersin was confronted, especially in Canton, by great difficulties and racial obstacles, and yet he secured twenty-six patients for the test of the plague antitoxine. Of these, only two died—a truly brilliant result. The serum keeps very well. Yersin urges the prophylactic use of it. When a case has broken out in any house, all the occupants should be inoculated.

Acetylene Gas and its Dangers have recently been discussed by eminent practical chemists (*Journal für Gasbeleuchtung und Wasserversorgung*, March 6, 1897). Numerous accidents among careless and inexpert people cause it justly to be regarded as dangerous. Yet its highly explosive quality is greatly lessened if it is carefully prepared and well washed with acid solutions of metallic salts, and if not even a trace of copper is present in the strong metal containers or anything else that the compressed gas touches. Pure acetylene gas, under no pressure, is not explosive; but under pressure of more than two atmospheres it is decidedly so, although not by mere concussion as of transportation. The producing of the gas from calcium carbide is attended with hardly any more danger than when hydrogen is evolved by the action of sulphuric acid upon zinc. Before compression, it should be gradually cooled by coil systems or by abundant cold water. Then it must be purified by washing, as by very strong (saturated) solution of calcium chloride, then by solutions of lead salts, and finally by sulphuric acid, all very cold (— 16° C.). Pictet employs a temperature of — 80° C. for the compression under a pressure of eight atmospheres. The very strong metal vessels in which the liquid acetylene is transported should not be more than two thirds full.

New Inventions, etc.

A NEW GENERAL OPERATING TABLE.

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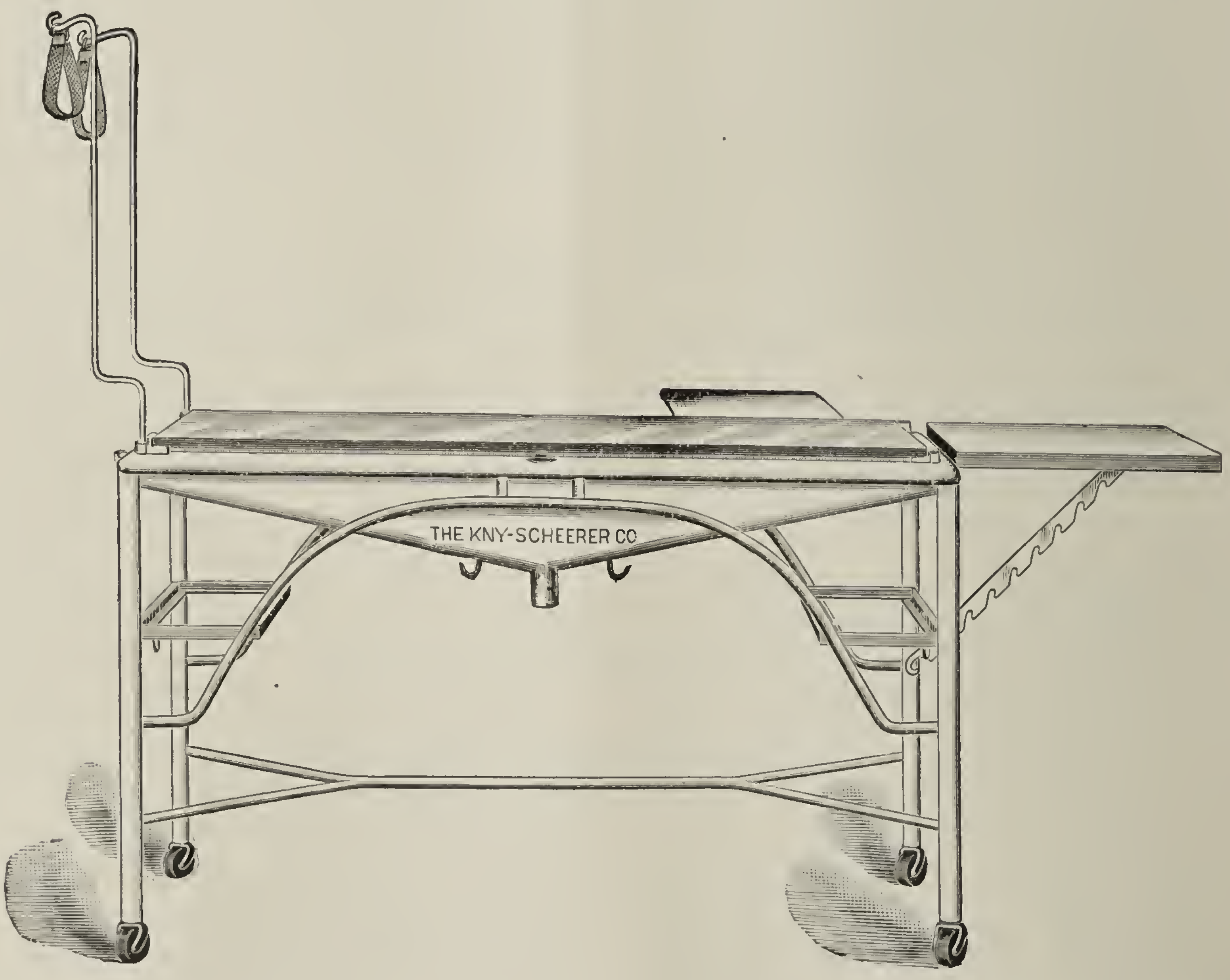
For several years Dr. Lewis A. Stimson has used in his service at the New York and the Hudson Street Hospitals a table constructed entirely of wood, and consisting of a shallow rectangular trough, across the top of which was laid a plank of such dimensions as to accommodate the body of the patient. The plank was the longer and was so placed at each operation that the field was over the trough, so that the solutions were caught therein and were then drained off.



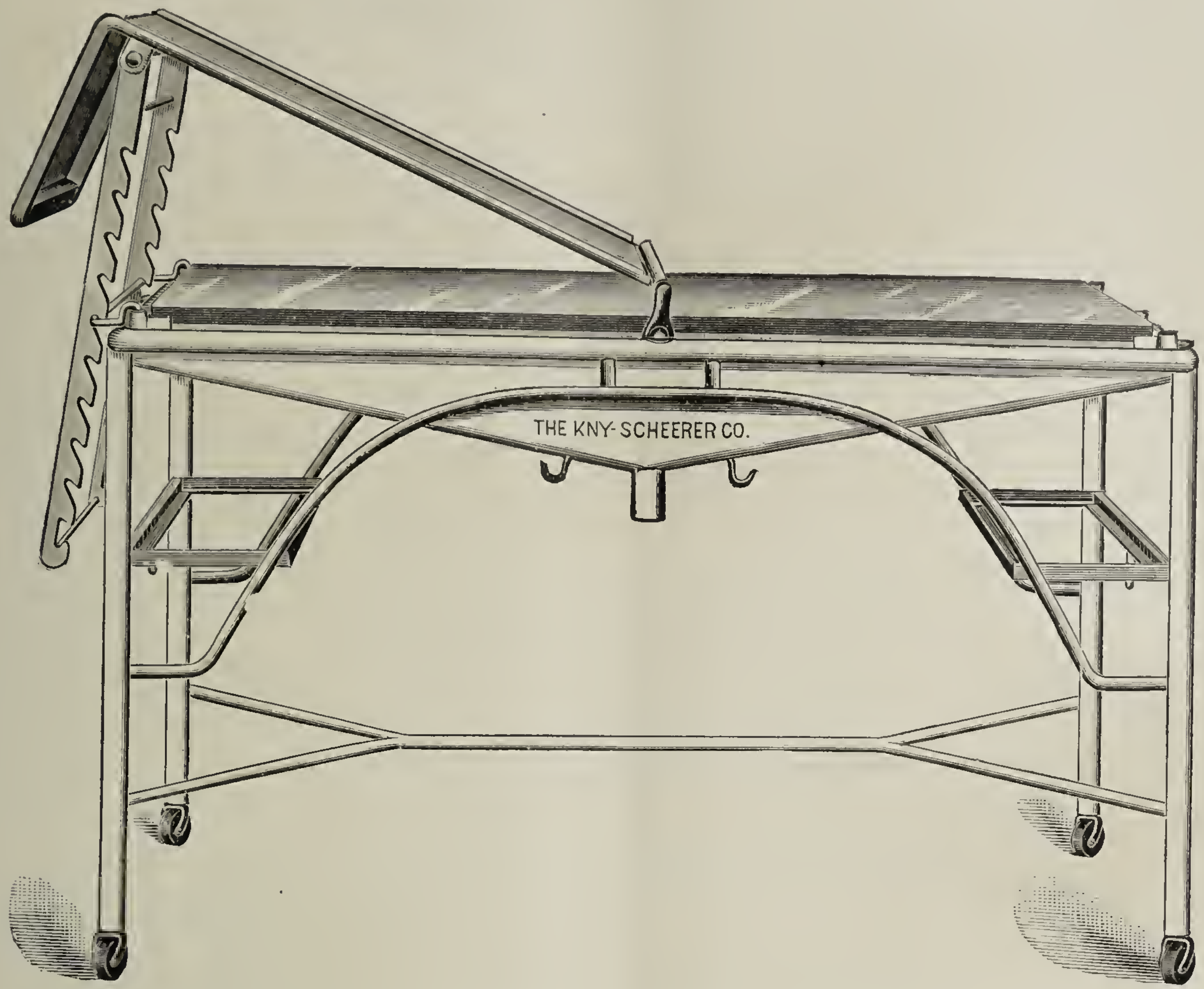
The table herewith presented involves the same principle of trough drainage, but the details of construction and other features make it entirely aseptic and enable it to meet the demands made on such an apparatus in general operating-room work.

There is a rectangular frame of iron to which is attached a pan, somewhat curved from side to side, shallow at either end, but deep in the centre. At the most dependent point in the pan there is an opening, beneath which a bucket is suspended to catch drainage fluids. Within each corner of the frame, securely fastened to the legs, there is set a small bracket with depressions to receive the rounded corners of a glass plate which forms the top of the table and which is entirely free all around, except at these points of support. The plate glass, which is an inch thick, seventeen inches wide, and fifty-two inches long, has its lower surface on a plane with the top of the frame. There is a drainage space of two inches and three quarters all around between the frame and the plate. The space may be as small as an inch at each end, so that in perineal operations the pan may drain and yet not interfere with the range of work.

The pan is nine inches and a half below the bottom of the plate at its centre and has a fall of six inches in twenty-six inches.

There is an extension leaf, as wide as the plate and eighteen inches long, which is hooked into two small eyes at either end of the frame. The leaf has only one support in the middle, as it can be unhooked only when it is dropped down. When down, it can be taken off and changed to the other end, thus turning the table around by only changing the leaf.

There is a side rest for arm or leg, partly shown in the cut, that forms the long arm of a lever with the fulcrum on the top of the frame, while the short arm is rubber tipped and extends well under the glass plate. This rest can be moved clear along either side of the table. It is slightly raised around its borders, is concave from side to side, and has a fall from its outer edge toward the pan into which it drains.



The Trendelenburg frame is of the width of the plate and is thirty-one inches long. It is made entirely of enameled iron, the glass plate that is usually found in such detachable frames being abandoned, as it is unwieldy, destructible, and no more aseptic. It is readily detachable, as shown in the cut. The cross bar, on which the legs of the frame rest, can be lifted out, and into the same holes the lithotomy stirrups can be placed, and the same can be used on either end of the table.

There is a glass shelf, eight inches deep, extending across each end of the table, for the convenience of the anæsthetizer or operator.

The material, except for the glass top and shelves and nickel-plated fittings, is of enameled iron that can be washed. Although the glass top is but fifty-two inches long, the extension leaf and drainage interval make an entire length of over six feet.

The patient can always be placed so that the field of operation is over the drainage pan, unless operations on both ends are done at the same time.

In cleaning the table the glass top is lifted at one side and supported by a rest that allows sufficient room for the hand and arm to be passed in under the glass and over the pan. This device protects the glass against injury from any ingenious manipulations on the part of an attendant.

This table may be of general utility in the operating room because—

1. The drainage is perfect, the floor is kept clean, and the patient may be kept dry.

2. It is aseptic, has no angles or crevices, and is easily cleaned.

3. The construction is mechanical, simple, rigid, durable.

4. It is adapted to any work in traumatic or pathological surgery.

5. It is not portable.

Miscellany.

The New New Hampshire Law to Regulate the Licensing and Registration of Physicians and Surgeons—We are glad to see that New Hampshire has now a suitable law on this subject. It is as follows:

Section 1. No person shall hold himself out to the public as a physician and surgeon, or advertise as such, or use the title of M. D. or Dr. (or any title which shall show or tend to show that the person using the same is a practitioner of any of the branches of medicine) in New Hampshire after September 1, 1897, unless previously registered and authorized, or unless licensed and registered as required by this chapter; nor shall any person practise medicine and surgery whose authority is suspended or revoked by the regent of a State board.

Sec. 2. Within sixty days after the passage of this act, the governor and council shall appoint three separate State boards of medical examiners, of five members each, so appointed that the term of office of one member shall expire each year, and the members thereafter appointed shall hold office five years, or until their successors are appointed and qualified. One board shall represent the New Hampshire Medical Society, one the New Hampshire Homœopathic Medical Society, and one the New Hampshire Eclectic Society. Each of these societies shall nominate, annually, twice the number of examiners to be appointed in that year on the board representing it. The names of such nominees shall be annually transmitted, under seal, by the president and secretary, to the governor and council, who shall appoint from such lists the examiners required to form the boards and to fill any vacancy that may occur from expiration of office or otherwise. Each nominee, before appointment, shall furnish to the governor and council satisfactory proof that he has received the degree of doctor of medicine from some registered medical school, and that he has legally practised medicine in this State for at least five years. If no nominees are presented from a society to the governor and council, they may appoint from members in good standing in such society without restriction. The governor and council, upon recommendation of the board, may remove any examiner for misconduct, incapacity, or neglect of duty.

Sec. 3. Every medical examiner shall receive a commission of appointment from the State, and before beginning his term of office shall file with the secretary of state the constitutional oath of office. Each board, or any member thereof, may take testimony and proofs concerning all matters within its jurisdiction. Each board may make any by-laws and rules, not inconsistent with law, necessary in performing its duties.

Sec. 4. The superintendent of public instruction, *ex officio*, shall be the regent of the state boards of medical examiners, and shall perform such duties as are herein specified.

Sec. 5. From the fees provided by this act, the regent may pay all proper expenses incurred by its provisions, except compensation to medical examiners; and any surplus at the end of any year shall be apportioned equally among the three boards; and the State shall not pay the expenses of said boards, or either of them, or compensate them, or either of them, for services rendered under their commissions.

Sec. 6. Each board shall annually elect from its members a president and a secretary for the year, and shall hold one or more meetings each year, pursuant to call of the regent, who may also call joint meetings of the three boards or of their officers. At any meeting a majority shall constitute a quorum, but questions prepared by the boards may be grouped and edited, or answer papers of candidates may be examined and marked by committees duly authorized by the boards.

Sec. 7. The regent shall admit to examination any candidate who pays a fee of ten dollars and submits satisfactory evidence, verified by oath, if required, that he—

1. Is more than twenty-one years of age.
2. Is of good moral character.
3. Has graduated from a registered college; or satisfactorily completed a full course in a registered academy or high school; or had a preliminary education considered and accepted by the regent as fully equivalent.
4. Has studied medicine not less than four full school years, of at least nine months each, including four satisfactory courses, of at least six months each, in four different calendar years in a medical college, registered as maintaining at the time a satisfactory standard. The regent shall accept, as the equivalent for any part of the third and fourth requirements, evidence of five or more years' reputable practice, provided that such substitution be specified in the license.
5. Has either received the degree of bachelor or doctor of medicine from some registered medical school, or a diploma or license conferring full right to practise medicine in some foreign country.

Students who matriculate in a New Hampshire medical school before January 1, 1898, on the prescribed study of medicine, shall be exempt from this preliminary education requirement.

Sec. 8. Each board shall submit to the regents, as required, lists of suitable questions for thorough examinations in anatomy, physiology and hygiene, chemistry, surgery, obstetrics, pathology and diagnosis, and therapeutics, including practice and materia medica. From these lists the regent shall prepare question papers for all these subjects, which at any examination shall be the same for all candidates, except that in therapeutics, practice, and materia medica all the questions submitted to any candidate shall be chosen from those prepared by the board selected by that candidate and shall be in harmony with the tenets of that school, as determined by its State board of medical examiners.

Sec. 9. Examinations for license shall be given at Concord, in this State, and at least twice annually, and shall be exclusively in writing and in English. Each examination shall be conducted by the regent, or a competent examiner appointed by him, who shall not be one of the medical examiners. At the close of each examination the regent or examiner in charge shall deliver the questions and answer papers to the board selected by each candidate, or to its duly authorized committee, and such board, without unnecessary delay, shall examine and mark the answers and transmit to the regent an official report, signed by its president and secretary, stating the standing of each candidate in each branch, his general average, and whether the board recommends that a license be granted. Such report shall include the questions and answers and shall be filed in the public records of the regent. If a candidate fails on first examination, he may, after not less than six months' further study, have a second examination without fee. If the failure is from illness, or other cause satisfactory to the boards, they may waive the required six months' study.

Sec. 10. On receiving from a State board an official report that an applicant has successfully passed the examinations and is recommended for license, the regent shall issue to him a license to practise medicine. Every license shall be issued by the regent under seal, and shall be signed by each acting medical examiner of the board selected, and by the regent, and shall state that the licensee has given satisfactory evidence of fitness as to age, character, preliminary and medical education, and all other matters required by law, and that after full examination he has been found properly qualified to practise. Applicants examined and licensed by other State examining boards registered by the regent as maintaining standards not lower than those provided by this chapter, and applicants who matriculate in a New Hampshire medical school before January 1, 1898, and who receive the degree M. D. January 1, 1903, may, without further examination, on payment of five dollars to the regent and on submitting such evidence as may be required, receive an indorsement of their licenses or diplomas conferring all rights and privileges of a regent license issued after examination.

Before any license is issued it shall be numbered and recorded in a book kept in the regent's office, and its number shall be noted in the license. This record shall be open to public inspection, and in all legal proceedings shall have the same weight as evidence that is given to a record of conveyance of land.

Sec. 11. This chapter shall not be construed to affect commissioned medical officers serving in the United States army, navy, or marine-hospital service, while so commissioned; or any one while actually serving on the resident medical staff of any legally incorporated hospital; or any legally registered dentist exclusively engaged in practising dentistry; or any manufacturer of artificial eyes, limbs, or orthopædic instruments or trusses in fitting such instruments on persons in need thereof; or any lawfully qualified physician in other States or countries meeting legally registered physicians in this State in consultation; or any physician residing on a border of a neighboring State and duly authorized under the laws thereof to practise medicine therein, whose practice extends into this State, and who does not open an office or appoint a place to meet patients or receive calls within this State; or to the regular or family physicians of persons not residents of this State, when called to attend them during a temporary stay in the State, or to the hotel physician regularly employed by the landlord of the summer hotel in the care of his guests or employees; neither shall the provisions of this act apply to clairvoyants, or to persons practising hypnotism, magnetic healing, mind cure, massage, Christian science, so called, or any other method of healing if no drugs are employed or surgical operations are performed; *provided,* such persons do not violate any of the provisions of this act in relation to the use of M. D. or the title of doctor or physician.

Sec. 12. Any person who, not being then lawfully authorized to practise medicine within this State and so registered according to law, shall hold himself out to the public as a physician and surgeon, or advertise as such, within this State, without lawful registration or in violation of any provision of this chapter; and any person who shall buy, sell, or fraudulently obtain any medical diploma, license, record, or registration, or who shall aid or abet such buying, selling, or fraudulently obtaining, or who shall practise medicine under cover of any medical diploma, license, record, or registration illegally obtained, or signed, or issued unlawfully, or under fraudulent representations or mistake of fact in a material regard; and any person who shall append the letters M. D. to his or her name; or shall assume or advertise the title of doctor (or any title which shall show or tend to show that the person assuming or advertising the same is a practitioner of any of the branches of medicine) in such a manner as to convey the impression that he or she is a legal practitioner of medicine, or of any of its branches, without having legally received the medical degree, or without having received a license which constituted at the time an authority to practise medicine under the laws of this State then in force, shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not more than one hundred dollars or imprisonment for three months for the first offense; and on the conviction of any subsequent offense, by a fine of not more than two hundred and fifty dollars or imprisonment for not less than six months, or by both fine and imprisonment.

Sec. 13. Every person who is a practitioner of medicine and surgery in this State prior to the passage of this act shall be, upon satisfactory proof thereof to the regent and upon the payment of a fee of one dollar, entitled to registration; and the said regent shall issue to him a certificate signed by himself and the chairman and secretary of such board of medical examiners as the applicant may elect; and said certificate shall state the facts and the cause of said registration, and shall entitle the said person to practise medicine legally in the State of New Hampshire.

Sec. 14. The first meeting of the boards may be called by any one of the members by a notice in writing, stating the time and place of meeting, sent by mail to each of the other members at least one week prior thereto.

Sec. 15. This act shall take effect on its passage.

The Microbian Origin of Calvities.—The *Presse médicale* for March 13th publishes a report of a recent meeting of the Société française de dermatologie et de syphiligraphie, at which M. Sabouraud referred to an altogether peculiar morbid entity which he thought should be exclusively designated by the term fatty seborrhœa. It was uniform and regular everywhere and combined, under the same microbian causes, three or four skin diseases hitherto classed as different diseases.

This fatty seborrhœa was known, on the face, as acne oleosa and acne comedo, and on the scalp as oily seborrhœa. Its only seat of invasion was the hair follicle. The microbian colony occupied the upper third of the follicle, enveloped in horny layers, which surrounded it on all sides and formed of it a veritable cocoon.

This microbian infection was accompanied always and everywhere by two symptoms, oversecretion of the sebaceous gland and the falling of the hair the follicle of which was invaded. The latter symptom M. Sabouraud thought presented considerable importance.

Whenever the specific bacillus of seborrhœa invaded a follicle it produced around this follicle, particularly at the base and around the hair papilla, a rush of migratory cells. The papilla gradually became atrophied and the hair grew thinner and colorless; finally the papilla died and the hair fell out. Even on the smooth regions which were normally downy, this symptom was produced. Sections of the skin showed, in the follicle, ten, fifteen, and twenty successive generations of dead layers which had been killed by the infection and had remained blended together in one spot in the microbian colony.

The depilation of the scalp was the result of the same seborrhoic infection, and it was observed also in proportion to the infection. The bacillary colonies were extraordinarily abundant; the sebum, spread out on the surface of the skin, was of a homogeneous appearance; it was composed of an infinite multitude of seborrhoic cocoons discharged from the follicles, and each of these cocoons contained the specific bacilli by the million.

When the microbian infection once invaded the scalp it remained endemic and definitive, so that after the hair fell out once it did not grow again, and the permanent effusion of this microbian sebum gradually produced permanent sterility of the follicles. In this way ordinary calvities, that of bald-headed persons, which was also called arthritic or spontaneous, was gradually produced; progressive sclerosis of all the elements of the hairy follicle led to considerable changes in it. The entire part of the follicle invaded by the microbian colony became anfractuous, hollow, and separated by narrow diaphragms, which rendered the infection inaccessible to external antisepsis. But the incredible abundance and the absolute purity of the infective material remained even when the calvities was fully and definitively accomplished. Even at the last stage of its evolution, ordinary calvities was the most purely microbian of all the cutaneous diseases known.

In this affection we might believe or not, said M.

Sabouraud, in the necessity of a diathesis previous to the microbian infection; but, in any case, the microbian nature of calvities was certain.

The Congress of American Physicians and Surgeons.—The fourth triennial session will be held in Washington, on Tuesday, Wednesday, and Thursday, May 4th, 5th, and 6th, under the presidency of Dr. William H. Welch, of Baltimore. The preliminary programme includes the following: The sessions of the societies will be held according to the programmes of each as follows:

The American Ophthalmological Society.—Subject: The Gouty and Rheumatic Diatheses, and their Relation to Diseases of the Eye. Papers will be read by Dr. Charles Stedman Bull, of New York; Dr. S. Oliver Richey, of Washington; Dr. S. D. Risley, of Philadelphia; Dr. Robert Sattler, of Cincinnati; and Dr. R. A. Reeves, of Toronto. To be discussed by Dr. J. M. DaCosta, of Philadelphia, and Dr. Henry M. Lyman, of Chicago.

The American Otological Society.—Subject: Otology in its Relations to General Medicine. A paper will be read by Dr. Clarence J. Blake, of Boston.

The Association of American Physicians, the American Physiological Society, and the American Pædiatric Society.—Subject: Internal Secretions Considered in their Physiological, Pathological, and Clinical Aspects. Papers will be read by Dr. William H. Howell, of Baltimore; Dr. Russell H. Chittenden, of New Haven; Dr. J. George Adami, of Montreal; Dr. James J. Putnam, of Boston; Dr. Francis P. Kinnicutt, of New York; and Dr. William Osler, of Baltimore.

The American Orthopædic Association.—Subject: Deformities of the Hip Joint, especially Congenital Dislocations. A paper will be read by Dr. E. H. Bradford, of Boston. To be discussed by Dr. V. P. Gibney, of New York, and Dr. Harry M. Sherman, of San Francisco.

The American Surgical Association.—Subject: The Classification of Acute General Peritonitis; The Prognosis and Treatment of the Different Varieties. Papers will be read by Dr. William S. Halsted, of Baltimore, and Dr. Robert Abbe, of New York. To be discussed by Dr. John Homans, of Boston; Dr. A. Van Der Veer, of Albany; Dr. Henry H. Mudd, of St. Louis; and Dr. Frederick Lange and Dr. Arpad G. Gerster, of New York.

The Influence of Chloroform and Ether on the Liver.—In the *Presse médicale* for March 20th there is an abstract of an article from the *Mittheilungen aus der Grenzgebiete der Medizin und Chirurgie*, 1896, page 303, in which the author, Dr. Bandler, reported the case of a man who was operated upon for hernia. The operation lasted nearly an hour, during which time two ounces and a half of chloroform were used.

On the following day the patient presented an icterus which became aggravated during the day, and twenty-four hours afterward the temperature was 100.4° F., the pulse 92, and the icterus of a dark color; headache and prostration were also observed. Twenty-four hours later the icterus became still darker, and an examination of the urine revealed the presence of biliary pigments, a large quantity of albumin, and hyaline and granular casts.

The liver was painful on pressure and the stools were bloody; at night the patient became delirious, and finally fell into a state of coma. He died on the following day, four days after the operation.

At the autopsy the wound was found to be in a perfect condition. The liver presented classic lesions of acute yellow atrophy; in the kidneys there were all the symptoms of parenchymatous nephritis of long standing; the heart was overloaded with fat; in the muscles of the body there were several hæmorrhagic spots.

In this case death was evidently caused by the acute yellow atrophy of the liver, which the author did not hesitate to attribute to the peculiar action of chloroform on the hepatic gland, an action which has been ascertained by a large number of experimenters and clinicians. In this case the liver had probably been affected by alcohol, and Dr. Bandler thought this had favored the action of the chloroform.

In order to assure himself of this action of chloroform on the liver, the author made a series of experiments on rabbits and dogs. Inhalations of chloroform and of ether were administered, and he found that, while chloroform led to granulo-fatty degeneration of the hepatic cells, ether exercised no action on the liver.

A New Feature for the Bicycle.—We have had an opportunity of examining an appliance known as Johnston's eccentric hub, which, as its name implies, is designed to produce eccentricity in the motion of one wheel of any bicycle to which it may be applied, and so cause a movement pleasant to the rider, similar to that of a horse cantering. The hub admits of adjustment so that this motion may be regulated or dispensed with at will. Persons who have tried the device think it improves the exercise derived from bicycling, inasmuch as, besides giving an agreeable motion, it brings into play a greater number of muscles.

A Bill to Regulate Dispensary Relief in the City of New York.—A bill containing some extraordinary provisions is now before the legislature. The text of the bill is as follows:

The people of the State of New York, represented in the Senate and Assembly, do enact as follows:

Section 1. A dispensary is hereby defined to be a place established by any person, persons, or corporation for the practice of medicine and surgery, and to give medical and surgical aid or treatment gratuitously to poor persons who are unable to pay therefor.

Sec. 2. No person shall apply for such treatment in any dispensary, nor shall any person, persons, or corporation conducting such dispensary give treatment or medical aid to any person, unless such person so applying for such treatment shall be a poor person and unable to pay for medical treatment; and all persons who are entitled to be so treated shall be treated by such dispensary free from charge for services so rendered, and shall be furnished with the necessary medicines and appliances required by such treatment.

Sec. 3. In no case shall any person, persons, or corporation conducting such dispensary, directly or indirectly, receive any pay or compensation whatever for the treatment of any such persons entitled to be so treated, nor be entitled to or receive any pay or compensation for the medicines or appliances so furnished, and no person, who is not a poor person, shall be so treated in such dispensary, except in cases of emergency.

Sec. 4. No dispensary shall be carried on or conducted in any place commonly known as a drug store, or a place for the sale of drugs or medicines, nor shall the same be carried on in any place commonly known or defined by law, or by the rules and regulations of a health board or health department, as a "tenement house."

Sec. 5. All persons desiring to avail themselves of the right to be so treated in any such dispensary shall produce to the person, persons, or corporation so carrying on said dispensary a certificate in writing from the owner or owners of the premises wherein such persons reside, or from the police captain, or person in charge of the police of the district in which he or she resides, or from the alderman of the district, or from any charity organization, that the said applicant is a poor person, unable to pay for medical treatment or medicines, and such writing shall be in the form prescribed by such dispensary and be of no force and effect after the expiration of thirty days from the date thereof.

SEC. 6. Any person who shall apply to such dispensary to be treated, who is not a poor person, or shall obtain treatment or medical aid at such dispensary when he or she shall not be entitled thereto under the provisions of this act, the person so applying or so receiving such treatment or medical aid, or any person or persons who shall aid such person so applying to be treated in such dispensary, or shall sign such certificate, knowing that such person so applying to be treated is not a poor person, shall be deemed guilty of a misdemeanor.

SEC. 7. Power and authority is hereby conferred upon the societies known and designated as follows—viz., The New York County Medical Society, the New York Homœopathic County Medical Society, the New York Eclectic Medical Society, the New York County Medical Association, the New York Medical Society for the Advancement of Practice of Medicine, the Harlem Medical Society, the Eastern Medical Society, the German Medical Society of the City of New York, and the United Charities of the City of New York, under the certificate of appointment signed by its president and secretary and attested to by its corporate seal, to nominate and appoint one person, who, with the persons to be selected by all said societies, shall compose a board to be known as the "Medical Board for the Supervision of Dispensaries within the City of New York," and such board shall have the power to make such rules, regulations, and by-laws for its organization, government, and management; to adopt such rules and regulations with reference to the establishment, management, mode, and manner of carrying on and conducting such dispensaries, and provide for the supervision thereof, and to adopt such rules and regulations with regard thereto as, in the judgment of said board, may be necessary for carrying out and giving force and effect to the provisions of this act, and upon the adoption thereof to cause the same to be distributed among such dispensaries, and all such dispensaries now in existence or hereafter to be established shall be subject to such rules, regulations, and by-laws, and subject to the supervision of said board. Any vacancy in said board shall be filled by an appointment of the society to which the member belongs whose death, resignation, or inability to act creates a vacancy.

SEC. 8. Any person or persons or corporation so conducting or carrying on a dispensary, and violating any rules, regulations, and by-laws so made by said board, after notice of the adoption thereof, and who shall fail to comply with any such rules, regulations, and by-laws so adopted by said board, may be prosecuted by said board or any officer thereof, and, upon conviction thereof, be deemed guilty of a misdemeanor, and shall be punished by a fine of not less than fifty dollars or more than two hundred and fifty dollars, or by imprisonment of not less than one month or more than six months, or both, such fine and imprisonment for the first offense and six months' imprisonment for each subsequent offense.

SEC. 9. The husband and wife shall be jointly and severally liable to pay for professional services of a physician rendered to them, or either of them, or any member of their family, and the joint or several property of the husband and wife shall be liable to levy and sale under an execution upon such judgment, except such property as may by law be exempt from levy and sale under an execution.

SEC. 10. Whenever an execution against the property issued upon any judgment rendered for such professional services, where the judgment shall not exceed the sum of fifty dollars, shall be returned unsatisfied, the husband of said family shall be liable to arrest upon an execution against the person, and he shall thereupon be confined in the county jail until such judgment is paid, but not to exceed the term now provided by law.

SEC. 11. This act shall take effect immediately.

Gold Foil in Cerebral Surgery.—In the *Boston Medical and Surgical Journal* for March 25th Dr. H. H. A. Beach relates the case of a young girl who had suffered from epilepsy for eight years following a compound comminuted fracture. An operation was performed which was followed by an uneventful and complete recovery, and for fifteen months the patient was free from convulsions. Then while stepping down from a wagon she was thrown violently to the ground, her head striking upon the site of the old injury and operation. The convulsions returned and continued with varying frequency until she entered the hospital again for treatment.

The old wound was opened and, as in the first operation, a tough cicatrix was found firmly uniting the brain and the bone. A careful dissection separated them, and the cicatricial tissue was removed from the brain. To prevent adhesion, a plate of sterilized gold foil (No. 60, dental), enough larger than the opening to be retained in place against its bony edge by the pressure of the brain from beneath, was inserted, constituting a metallic dura mater. The skin flap was turned back to its place covering the foil, and sutured. Rapid healing followed, with no evidence of local or constitutional irritation.

After the second operation, Dr. Beach goes on to say, the convulsions occurred frequently for the following year, but with diminished intensity and much irregularity. They were more frequent at the menstrual period and after overindulgence in eating. By the following October a favorable change had been noted by her family, which continued up to June, 1894 (two years after the second operation), when the seizures had become light and were with few exceptions limited to the menstrual periods.

General improvement has continued up to the present time, and in other directions. She had a number of convulsions for one day in March, 1896, followed by an hysterical condition for a few days, after which time she was well as usual for nine weeks, when she had a light seizure. Again, in August, she had three in the night (the last reported). Both of the later attacks were associated with the menstrual period.

Time alone, says the author, can settle the permanency of the relief in this case, the report of which has been delayed five years lest the apparent gain should be reversed. If the rigid adhesion of the brain to the bone was the primary source of the convulsions, it is reasonable to believe that the prevention of such adhesions should operate toward their relief. The adoption of a gold plate for that purpose was the result of necessity, for nothing else promised so much. While it is yet impossible to determine the value of the principle, he says, owing to the limited number of operations where it has been used, no unfavorable reports from its employment have been reported. The recorded cases are encouraging in the direction of a procedure that, without delaying union or adding to the common risks, protects the brain from injury and protrusion during and after healing, and provides against such well-recognized sources of brain irritation as the adhesions that may follow any case of compound skull fracture or its equivalent by operation.

A Hairpin Found in a Woman's Bladder by Means of the X Rays.—Under this title, says a writer in the *Gazette de gynécologie* for March 1st, Dr. Leiffart, of Nordhausen, published an account of the following case in the first number of the *Centralblatt für Gynäkologie* for 1897: A young woman had suffered since January, 1895, with catarrh of the bladder. Several times the affection, which had been nearly cured by an appropriate treatment, broke out again spontaneously, causing sharp pain. When Dr. Leiffart was called to see the patient he made a bimanual examination, which resulted in the conclusion that there was a foreign body in the vesical cavity; the sensation was like that caused by plunging a rigid sound deep into the bladder. At this time the patient's mother recalled the fact that her daughter had swallowed a hairpin shortly before the onset of the affection.

The patient was then examined by means of the X rays. Two sensitive plates were wrapped in black paper and placed in condoms in order to prevent contact with the humidity of the vaginal cavity. They were then introduced into the vagina, which had been previously dilated, while the tube was placed above and as near the abdomen as possible. Two exposures, one of eight and the other of fourteen minutes' duration, gave excellent results. The hairpin was perfectly visible; it was then extracted, and four days afterward the patient left the hospital cured.

Acute Pain in the Region of the Stomach and Pancreas apparently Produced by the Continuous Use of Saccharin.—Mr. R. G. Hogarth relates the following case in the *British Medical Journal* for March 20th: The patient when first seen three years ago complained of great pain in the epigastric and right hypochondriac regions. It began in the epigastrium about an hour before rising, and radiated through to the back and across the liver. It disappeared gradually after rising, and never lasted more than an hour. In bad attacks he described the pain as agonizing, stabbing in character, coming on in paroxysms which lasted about two minutes, followed by a short period of comparative relief.

The author saw him in one or two bad attacks, and they simulated very much biliary or renal colic. There was never any jaundice or change in the urine, and he had never passed gallstones. There was distinct tenderness on deep pressure in the right hypochondriac region.

In spite of treatment by dietary and medicine for three months, he was no better, and had lost fourteen pounds in weight. He went to Homburg and took a course of the waters, but returned no better. For nine months scarcely a day passed without pain. He had lost twenty pounds, and was very despondent. He never vomited, and took food fairly well. He consulted a physician, and his case was diagnosticated as probably pancreatic or pyloric colic, and appropriate treatment was given. His symptoms, however, continued, and he had lost over twenty-eight pounds; he looked very ill, and at times could not follow his occupation.

He had been taking six or more saccharin tabloids, each containing half a grain, every day for three years and a half, instead of sugar. The author directed him to stop the tabloids; the pain gradually ceased, and after the first week entirely disappeared. At the end of a year he had gained in weight, was perfectly well, and had no return of the pain.

Mr. Hogarth thinks the pain in this case was directly connected with the ingestion of saccharin, for it disappeared almost immediately after the use of saccharin had been discontinued.

Furthermore, it has been stated that if saccharin is taken by the mouth for a considerable length of time continuously in fairly large doses, it produces acute neuralgic pain in the solar plexus and its branches.

Natural Mineral Waters and the Tariff.—Seven years ago, as many of our readers may remember, the New York County Medical Association passed a resolution favoring the placing of foreign natural mineral waters on the free list, and that this resolution was printed in the form of an introductory paragraph to a petition which, signed by many eminent physicians of New York, Boston, Philadelphia, Chicago, Baltimore, Providence, and other cities, was laid before Congress. Now a similar petition has been prepared, and signed by a great number of the most eminent medical men of New York. It is as follows:

Petition of the Medical Profession of the United States.—To the Honorable the Senate and House of Representatives of the United States of America in Congress assembled: We, members of the medical profession in various sections of this country, respectfully present this our petition:

The tariff bill now under consideration in the House of Representatives would inflict duties upon natural mineral waters which would greatly lessen, if not entirely prevent, their importation.

Under the existing tariff, and all others since 1872, the dietetic effervescent waters and all other natural mineral waters have been, for reasons of public utility and because of their great value to public health as hygienic beverages and as medicines, expressly admitted free except in respect to a duty on the bottles in which they are imported.

The carbonic-acid gas that the natural mineral waters contain, and which necessarily renders them more or less effervescent, is an important element in their constitution; it has the effect of preserving their valuable natural ingredients in solution; and without such free carbonic-acid gas they would inevitably suffer change and deterioration, which would alter their constitution and destroy their properties and good effects; they would undergo decomposition and become undrinkable and useless.

The heavy and prohibitive tax which it is now proposed to levy on such mineral waters would work a serious injury by depriving the public and the medical profession of the benefits now derived from these necessary and important resources of hygiene and medicine, and we respectfully submit that, on the grounds of health and public utility, the provisions relating to foreign natural mineral waters, and to the bottles wherein they are imported, which were in force prior to October, 1890, be re-enacted in any tariff which is sanctioned by your Honorable Houses.

We respectfully and earnestly pray that our petition may be considered at an early date.

Original Communications.

ANALGESIA, THERMIC ANÆSTHESIA, AND ATAXIA,

RESULTING FROM FOCI OF SOFTENING IN THE MEDULLA OBLONGATA AND CEREBELLUM, DUE TO OCCLUSION OF THE LEFT INFERIOR POSTERIOR CEREBELLAR ARTERY. A STUDY OF THE COURSE OF THE SENSORY AND CO-ORDINATING TRACTS IN THE MEDULLA OBLONGATA.

By HENRY HUN, M. D.,
PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM IN THE ALBANY MEDICAL COLLEGE.

The following case, which was sent to me from Hudson by Dr. H. Lyle Smith, to whom I am indebted for a number of interesting cases (among them a case of Landry's paralysis, published in the *Journal* in 1891), seems to me to be of unusual interest. It gives clinical confirmation to a number of anatomical details which can hardly be said to be firmly established, and it throws light on much that is obscure in the anatomy and physiology of the medulla oblongata, the pons varolii, and the cerebellum, and probably gives the clinical complex of symptoms necessary to establish the diagnosis of occlusion of the inferior posterior cerebellar artery. I consider it as especially fortunate that such a skilled investigator as Dr. Van Gieson has made the pathological examination, which was actually done in 1893, but from various unavoidable causes of delay the full report of the examination has only just been completed. The clinical history is given at greater length than may appear desirable, but the case presents so many unsolved problems that it seems wiser to give too many details rather than to omit anything which may in the future be needed for a full comprehension of it in all its bearings.

George M. K. entered the Albany Hospital on February 23, 1889. He is fifty-three years old; married; a commercial traveler by occupation; has healthy children, and comes from a long-lived family, which is perfectly free on both sides from any hereditary taint, especially in regard to nervous diseases and tuberculosis. The patient has been a rather free drinker and excessive smoker, but has been absolutely free from any venereal disease. He has always been of a nervous temperament in that he has been very ticklish, pointing a finger at him being enough to excite him, and at times when excited he has had trouble in swallowing. In 1872 he passed through an attack of facial erysipelas, and last summer he felt a numbness in his right leg which lasted a few days, but which did not prevent his walking about and attending to business.

History of Attack.—With these two exceptions he has been perfectly well and strong until his present attack, which commenced with a feeling of being tired on February 13, 1889. This was not sufficient to cause him to send for a doctor, and he went to bed feeling fairly well. He awoke soon after midnight with a curious feeling of a lump in his throat as if he had swallowed something. Several times afterward in the night he awoke with this same feeling in his throat. In the morning he remained in bed rather by his wife's advice than from any feeling of inability to rise, but when breakfast was brought to him he found that he was unable to swallow even a teaspoonful of tea, and is convinced that had he tried to swallow any solid food he would have choked to death. At the same time his voice was hoarse and indistinct; pulse, 80; temperature, 99.5°; and he complained of a tingling and burning sensation over the left malar bone. Patient thought that he could walk, but by the advice of his physician remained in bed. He thought, however, that he could not use his left arm well, and when his right arm or leg was rubbed even gently he felt running up the limb a tingling sensation similar to that which he perceived without any external irritation in the left side of the face, and it felt like electric shocks. This sensation did not occur when the left arm and leg were rubbed.

Since that time the patient has been entirely unable to swallow liquids (he has not dared to attempt to take solid food), and has been fed through a stomach tube three times daily. At times he has seen and still sees, double when looking sideways at an object. His pulse has been at times irregular. He is unable to walk, and his speech is indistinct.

Physical Examination.—Patient is a strong, healthy-looking man. His face does not look quite natural, and at times it seems as if he had a facial paralysis, but none can be detected on careful examination. Pupils are equal, and respond both to light and to accommodation. There is a slight but decided ptosis of the left eyelid. Motion of eyeballs seems normal, except that perhaps the right eyeball does not move either inward or outward quite so far as does the left, but the difference is slight. No loss of vision. He looked directly at the sun at 11 A. M., with clear sky, with either eye, without blinking or feeling any ill effects (retinal analgesia (?)). He is certain that he could not have done so formerly. Valerian is smelled distinctly, but apparently not disagreeably, in either nostril, perhaps a little plainer on the right side. Ammonia is not smelled at all in the left nostril, but distinctly so in the right. His hearing is better in the left ear than in the right; but this is an old trouble, he having had many gatherings in the right ear. Patient can whistle, and can distend cheeks fully without allowing the air to escape through his lips. Tongue is protruded straight. Uvula raised rather more freely on the left side than on the right, and its tip points toward the left a little. Larynx is not easily seen; vocal cords appear to approximate normally. (The laryngoscopical examination was made but once and was far from satisfactory.) Tactile sensibility is normal on both sides of the tongue. Salt can be tasted about equally well on both sides of the tongue, but undiluted acetic acid does not cause the least taste on the left side of the tongue, but does on the right, although not painfully so. The anterior half only of the tongue was examined. The left side of the face, the left side of the tongue, the inside of the left nostril, the right arm, the right leg, and the right side of the body, although showing normal tactile sensibility, are absolutely insensible to pain (pin pricks) and to differences in temperature (hot and cold water in test tubes). So extreme is this that when at first his throat was sprayed by vapor from slacked lime, and the hot cup of lime was accidentally placed against his arm, he was entirely ignorant of the severe burn which it caused. In dressing him the next day the upper part of his arm was found to be severely burned, and is still red and angry looking, but at no time has he felt the least pain from it. The right side of his neck, in front of and over the sterno-cleido-mastoid muscle, is analgesic, but the analgesia is not evident behind this muscle. Elsewhere throughout the body the sensibility to tactile, painful, and thermic impressions is normal. Movements of the left arm and left leg are decidedly ataxic, so much so that he is unable to walk without support. He can not tell in what position his left arm or left leg is placed when his eyes are shut. The muscles of the legs are flabby and a little smaller than normal. No muscular tenderness. Plantar reflex very lively in both feet, but not so lively as formerly, he thinks. Knee-jerk normal in right leg, a little exaggerated in left. No ankle clonus in either foot. No increase of tendon reflex in either arm. Grasp of the left hand, 140–145; of the right, 165–190 (Mathieu dynamometer). When lying on his left side it is impossible for him to raise himself to the sitting posture, and when he sits up he has a tendency (sometimes irresistible) to fall over to the left, and especially for his head to fall on his left shoulder; and yet he can offer great resistance to any attempted forced movement of his head in either direction. Usually his voice is indistinct and articulation is defective, but at times it is distinct and clear. When the right foot or hand is rubbed gently a tingling sensation, altogether like the tingling constantly felt over the left malar bone, and which resembles electricity, runs up the limb to the body. He can hold the right arm out straight without tremor or any other motion. He can hold the left arm out straight in front of him without any tremor, but there is a tendency for the arm to move out sideways till it gets into or near the plane of the body, but this is not so marked as it was. He notices that in bed the left arm gets in an extended position at right angles to the body. There are no agreeable sensations when the right hand is rubbed gently. There is no retardation of the conduction of pain. Patient recognizes perfectly well, with eyes shut, objects placed in either hand. He is very constipated. He raises with great difficulty phlegm which seems to be constantly accumulating in his throat in excessive amount, probably because it can not be swallowed. Breath offensive. Urine free from albumin and sugar. Right side of face sweats much more than the left side, and this is true to a less extent of the right hand. During the early part of his illness he vomited once or twice daily.

March 20, 1889.—Patient leaves the hospital and returns to his home in Hudson to-day. There is a very slight improvement. He can not walk without assistance. He can stand alone with eyes open, and with feet far apart, but not when they are near together. The movements of the left arm and leg are rather less ataxic, and he can tell in what position they are placed when his eyes are shut. The analgesia and thermic anæsthesia still continue in right arm and leg and side of body, and in left side of face, tongue, nose, etc. Slight ptosis of left eyelid continues. His speech varies much at times, but is usually indistinct. He is still absolutely unable to swallow, and is fed through a tube. Electricity applied to the throat daily has been of no apparent benefit. He exhibits no disturbances of respiration.

The following is an extract from a letter from him, dated April 26, 1889: "I commenced to swallow Thursday, April 11th. I have to be very careful what and how I swallow. The feeling of my right and left sides has not changed. After my return home I steadily gained strength" (co-ordinating power (?)) "until I could walk alone with two canes very nicely, until the Sunday before I could swallow, when I lost my strength again all at once, which I have not yet regained."

June 2, 1889.—I saw the patient to-day at his home in Hudson. He has made great improvement. His speech is very much better and shows only slight indistinctness. He can swallow, although he is obliged to do so slowly and with care, but he now eats as much as he ever did. He can walk with a cane without much difficulty in his room, although his left leg is awkward, and he is afraid to walk without resting on some one's arm, but with his wife he often walks considerable distances in the street. He can not bear strong lights well, and can not look at the sun, as he did one day in the hospital. The analgesia and thermic anæsthesia still remain in right arm and leg and in left side of face and neck. The left arm and leg are still ataxic. Some burning pain in left side of face, and rubbing or the application of very hot water causes a tingling (unpleasant) sensation in right arm and leg. He can whistle a little; was formerly an excellent whistler. Ptosis of eyelid still continues. Motion of eyeballs normal. Plantar reflex lively on both sides. Patellar reflex very lively on both sides, more so on the left. Ankle clonus in left foot, especially when tired; none in right. Has been much troubled with rheumatism of left shoulder. Grasp of the left hand, 100; of the right, 165. Constipated.

July 24, 1891.—I went to Hudson to-day to see the patient again. He is not nearly as well as at the time of my last visit. In the winter of 1889 and 1890 he failed very much, and in the following summer, although somewhat better, he was much worse than in the summer of 1889. In October, 1890, he walked out of the house with the assistance of his wife, in order to register for election, and walked out then for the last time. Since that time he has been confined mainly to his bed or to a wheeled chair in which he is placed during a few hours every day, but during the past two weeks he has failed more rapidly, and now sits up only for his meals, for a few minutes each day. During the past two years he has had spells of feeling worse, but no sudden attacks which would at all resemble attacks of cerebral hæmorrhage. Speech has become so very indistinct as to be almost unintelligible. He also has much phlegm in his throat, which he is obliged to raise at short intervals with much effort. Swallowing has become more and more difficult, although he still can swallow both solid and liquid food, but frequently strangles and has every appearance of choking to death. He has been delirious a great deal of the time lately. He is very sensitive to cold, and perspires freely; also has periods of great nervous excitement, when he must be wheeled about. A few months ago, when he was a little stronger, during such nervous attacks it was necessary to get him up and walk about the room with him. In these attacks of nervous excitement he breaks out in a profuse sweat. If the sweat is not wiped away the skin feels as if it was going to crack open, and even when the sweat is rubbed away he feels as if it was still there on his skin. Of late he has difficulty in remembering what he wants to say. He starts off all right, but after a few words he stops, and has forgotten what he wanted to say when he commenced to speak. His right-sided facial paralysis, though still slight, has become more evident, so that he is now entirely unable to whistle. He has grown in every way much more feeble. The grasp of the left hand is 75, that of the right hand 125, with Mathieu's dynamometer. Pupils are equal and respond to light. There is a decided ptosis still of the left upper eyelid, but not any worse than on my last visit. Both legs are weak, and their muscles are very slightly atrophied, but not tender. There are exaggerated knee-jerk, exaggerated plantar reflex, and well-marked ankle clonus on both sides. He has no constriction about the waist and no difficulty in micturating, but is very constipated. His speech, although very thick and indistinct, and although he repeats his words several times before he finally speaks them, yet exhibits no trace of aphasia. The tactile sensibility seems normal in all parts of the body, and the sensibility to pain has returned in great part. It has returned especially in the right hand and arm and in the right leg. There still remains a very decided degree of analgesia of the left side of the face, and especially of the left side of the tongue. The patient, however, tastes about equally well on both sides, although on the right side the gustatory sensation is a little more acute. Although the analgesia of the left side of the tongue and of the left side of the face is very decided in comparison to the right side, yet it is not absolute. The patient is very emotional, crying easily, and is somewhat depressed. The cardiac sounds are normal, although the heart's action is labored, and he complains a great deal at times of palpitation, and of a feeling of distress in the cardiac region.

December 17, 1892.—Patient continued in about the same condition after I last saw him, gradually growing weaker, and having attacks of great restlessness and nervousness, in which he wanted to be assisted up and helped to walk about the room; and at other times he had attacks in which his mind seemed to be completely gone, and he was very childish indeed; but these attacks were only of a very temporary nature. He gradually failed, and about three days ago he became decidedly worse, having much more cough, and more difficulty in raising mucus, which gradually collected in his throat, and he steadily lost strength, was unable to take food, and died early yesterday morning.

Autopsy held Thirty-two Hours after Death.—Patient not much emaciated. Post-mortem rigidity was well marked, and there was a very great degree of hypostatic congestion. The skullcap seemed of normal thickness, and was not especially adherent to the dura. The dura mater presented no striking abnormalities. Pia mater seemed slightly opaque, milky looking, and there was rather an increased amount of subarachnoid fluid on the surface of the brain, although it could hardly be called abnormal. The medulla, seen from in front, had the appearance of slight atrophy of the left side. The arteries at the base, especially the basilar, were extremely atheromatous. Sections through the substance of the hemisphere showed nothing abnormal, and the ventricles were not dilated nor in any degree abnormal. Sections through the ganglia of the base revealed apparently a normal condition. Sections through the spinal cord showed a grayish degeneration in the posterior part of the right lateral column quite close to the gray matter, throughout the whole of the cord, and at points there seemed to be traces of a posterior sclerosis on the left side. Sections through the medulla showed, just posterior to the left olivary body, a gelatinous, soft, grayish appearance, and a decided atrophy of the left side.

The organs were put in Müller's fluid and were sent to Dr. Van Gieson for examination, and with the spinal cord and brain were sent portions of the median and ulnar nerves, portions of the biceps and triceps muscles from the left arm, and a portion of the ulnar nerve and triceps muscle from the right arm. The thoracic and abdominal cavities were not opened.

REPORT OF THE HISTOLOGICAL EXAMINATION OF THE NERVOUS TISSUES BY DR. IRA VAN GIESON.

After making Meynert's basal section of the brain, the cerebral cortex, basal ganglia, isthmus, spinal cord, portions of the ulnar and median nerves, and portions of the muscles of the arms were hardened in Müller's fluid during three months, and then in alcohol. The sections were stained by the Weigert-Pal method and by the picro-acid-fuchsine stain.

Before giving the results of the examination, it is important to realize that Weigert's method is a very imperfect stain for the study of such a case as this. Weigert's method shows superbly fibre systems when they are gathered together in compact bundles and have been cut off from their cells of origin for a long period of time, but this method is not adapted to exhibit fibres in early stages of degeneration, or degenerated fibres which are scattered, isolated, or interpolated among normal fibres. Thus, in certain regions of the cord, especially in the isthmus, where certain fibre systems are scattered and interpolated among other fibre systems, it is quite impossible to follow or even to recognize them, although they may be very thoroughly degenerated. The only satisfactory and reliable method of studying such a complex case is the method of Marchi—a method which gives a definite stain to every single degenerated fibre, so that, no matter how divergent and isolated the individual fibres of any system may become in the course of their pathway, each degenerated fibre of it may be recognized. The method of Marchi was not used in this case, because, unfortunately, at the time this examination was made (in 1893) this method was not generally known.

Having in mind, then, the imperfect exhibition of the degenerated tracts given by Weigert's method, we may proceed to a description of the lesions found in this case.

Muscles and Nerves.—The muscles and the peripheral nerves are entirely normal.

The Pia Mater, the Cerebral Cortex, and the Basal Ganglia.—The pia mater is slightly thickened and opaque over the posterior half of the right hemisphere, but this thickening has apparently not damaged the blood-vessels of the pia sufficiently to produce any recognizable changes in the cerebral cortex beneath. Sections of the cerebral cortex of the second frontal convolution, the paracentral lobule, and the middle of the superior parietal lobule are normal, as determined by the technique employed. Sections of the basal ganglia show that both their substance and their lining membrane are normal.

The Spinal Cord.—The spinal cord is also normal, except for some degenerations which are entirely secondary to the lesions in the medulla and pons and which will be described later, and for an instance of true heterotopia near Clarke's column on the right side of the upper level of the first lumbar segment.

The Isthmus.—In the medulla oblongata, the pons Varolii, and the cerebellum, lesions (foci of softening) are present, and it is in these lesions that the clinical symptoms must find their explanation, for the examination of the other portions of the nervous system has revealed nothing abnormal.

In dissecting the brain at the autopsy the cerebellum had been cut down in the median line to the floor of the fourth ventricle, and each half had been removed from the pons by cutting off the crura transversely. In this dissection the roof of the fourth ventricle had been torn off and could not be examined. The isthmus had been cut in transverse planes at several levels, prior to the hardening, as follows: First, at the level of the sensory decussation; second, at the level across the middle of the olivary bodies; third, at the junction of the medulla and pons; fourth, at the level of the entrance of the trigeminus nerve root; and fifth, at the junction of the crura and pons.

Serial sections imbedded in celloidin, from each of these levels, were cut through the entire medulla and pons up to the posterior commissure of the third ventricle, the sections being on an average a revolution and a half of the Thoma microtome wheel. Every fifth, or tenth, or fifteenth section, according to the importance of the level, was mounted in its order and stained, mainly by the Weigert-Pal method and occasionally with the picric-acid-fuchsine stain. Unfortunately, the planes of section in the fresh medulla had been made in bad directions at one or two levels, and this, with the subsequent warping of the segments in hardening, interfered with the continuity of the series—namely, at the level of the cochlear and third-nerve entrances.*

There are three foci of softening in this case. One is situated in the most lateral portion of the left side of the medulla at the midolivary level (Fig. 1). A second lies in the ventral portion of the midpontial level on the right side (Fig. 5). The third focus damages the left corpus dentatum cerebelli quite thoroughly (Fig. 6). These foci seem to have resulted from atheroma or obliterating endarteritis, possibly embolism, of branches of the vertebral and basilar arteries. The autopsy notes state that the basilar artery was very atheromatous, a condition which probably was present in the vertebrals also. The median lateral arteries of the medulla supply the dorsal, and the anterior lateral arteries of the medulla supply the ventral territory of the focus of softening in the medulla, and both of these sets of vessels arise directly or indirectly from the left vertebral.

The Medulla Oblongata.—The focus of softening in the medulla is an almond-shaped mass which lies in the peripheral and left lateral portion of the medulla between the dorsal border of the lower olive and a horizontal plane passing near the fasciculus solitarius, and measures four millimetres in the lateral, five millimetres in the dorso-ventral, and seven to eight millimetres in the caudo-cephalic diameters (Fig. 1). It is difficult, however, to assign precise limits to the softened mass, for it merges so imperceptibly into the surrounding zones of nerve-fibre degeneration that it is quite impossible to distinguish sharply the one from the other by any method of staining.

The area of softened tissue is shown in Fig. 1, which represents the level of the entrance of the upper vagus or glossopharyngeal roots, and is within two or three millimetres of the line of junction of the medulla

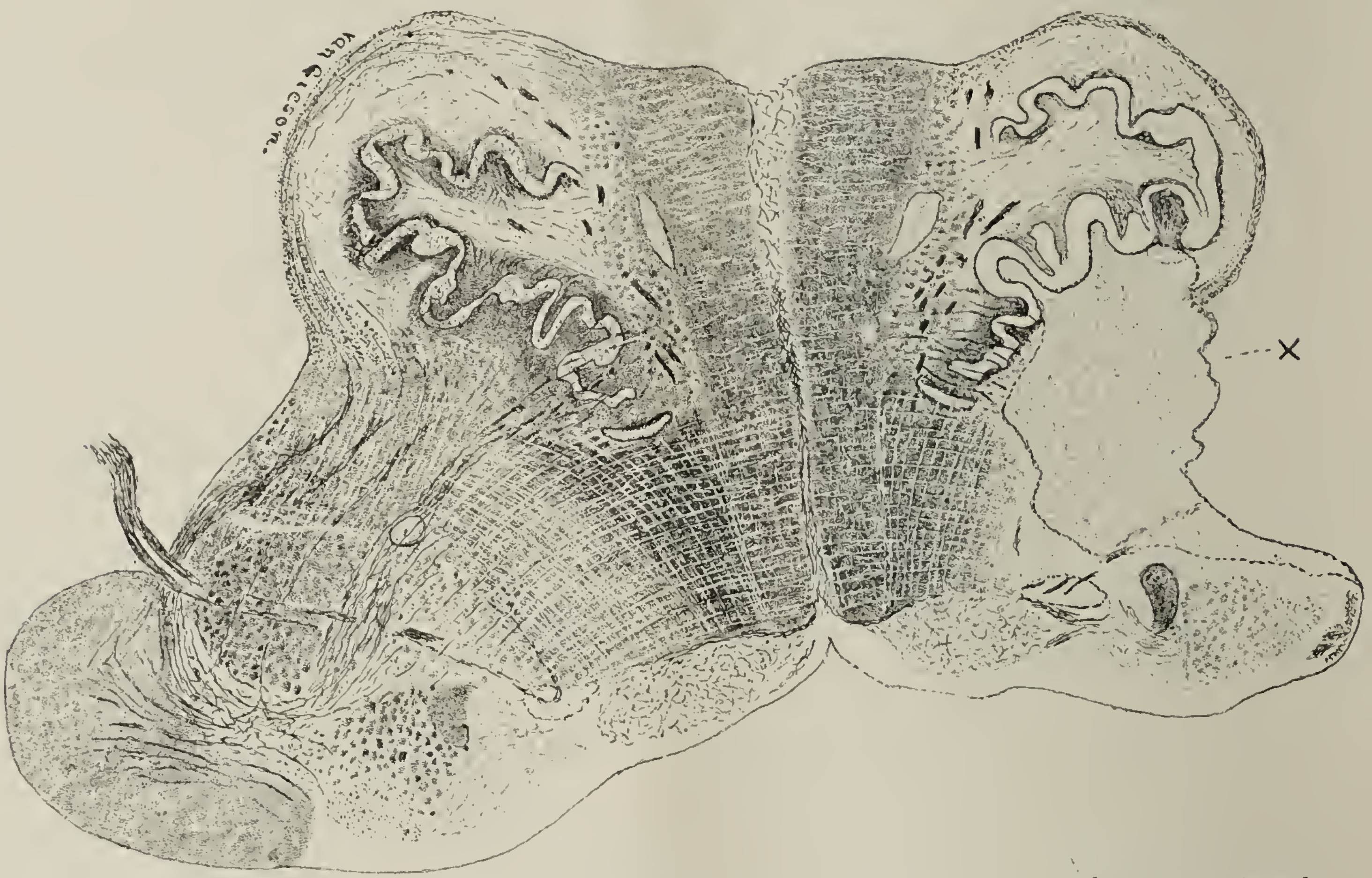


Fig. 1.—Represents a section through the medulla oblongata in a plane corresponding to the upper vagus or glossopharyngeus roots, and two or three millimetres caudad to the plane of junction of the pons and medulla. The focus of softening is shown at X, and areas of degeneration are shown surrounding and within both olivary bodies. The section is not strictly transverse, the right side being slightly cephalad to the left. The anterior pyramids became detached from this section and are not represented.

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* No lesions of the nucleus of the third nerve could be found to account for the ophthalmoplegia, yet there may have been a minute spot of softening in the nucleus which was not observed from the fact that the crura had been divided at this point in the fresh condition and had subsequently become much warped in the hardening, and some sections were lost in leveling up this segment in the microtome.

and pons. At this level there is absolute destruction of the tissues within the dotted line on the left lateral portion of the medulla. There is within it no trace of either ganglion cells or nerve fibres, except the vagoglossopharyngeal roots which pass undamaged through the dorsal region of the softened area. Furthermore, the whole outer half of the left side of the medulla at this level is shrunken; so that pronounced hemiatrophy of the medulla exists, which is also apparent for some little distance above and below this level. (This hemiatrophy is slightly exaggerated in Fig. 1, from the fact that the right side is at a slightly higher level than the left.)

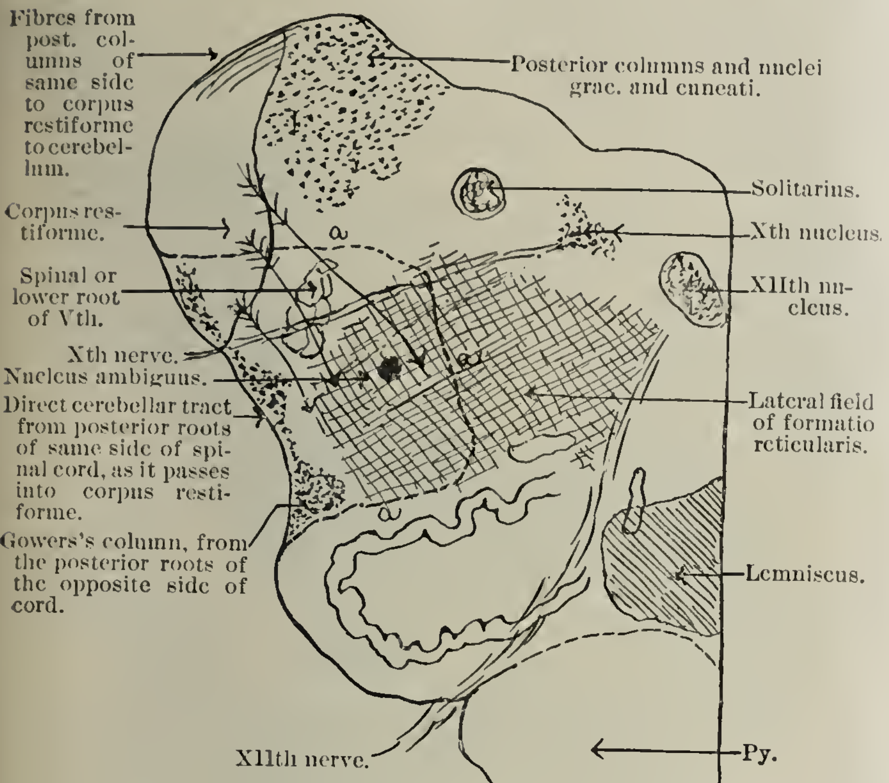
Fibres from post. columns of same side to corpus restiforme to cerebellum.
Corpus restiforme.
Spinal or lower root of Vth.
Xth nerve.
Nucleus ambiguus.
Direct cerebellar tract from posterior roots of same side of spinal cord, as it passes into corpus restiforme.
Gowers's column, from the posterior roots of the opposite side of cord.
XIIth nerve.
Posterior columns and nuclei grac. and cuneati.
Solitarius.
Xth nucleus.
XIIth nucleus.
Lateral field of formatio reticularis.
Lemniscus.
Py.
a
a
a

Fig. 2.—Diagram of the medulla near the lower level of the lesion, showing the nerve-fibre tracts destroyed by the latter. The area of softening included within the dotted line *a a a*.

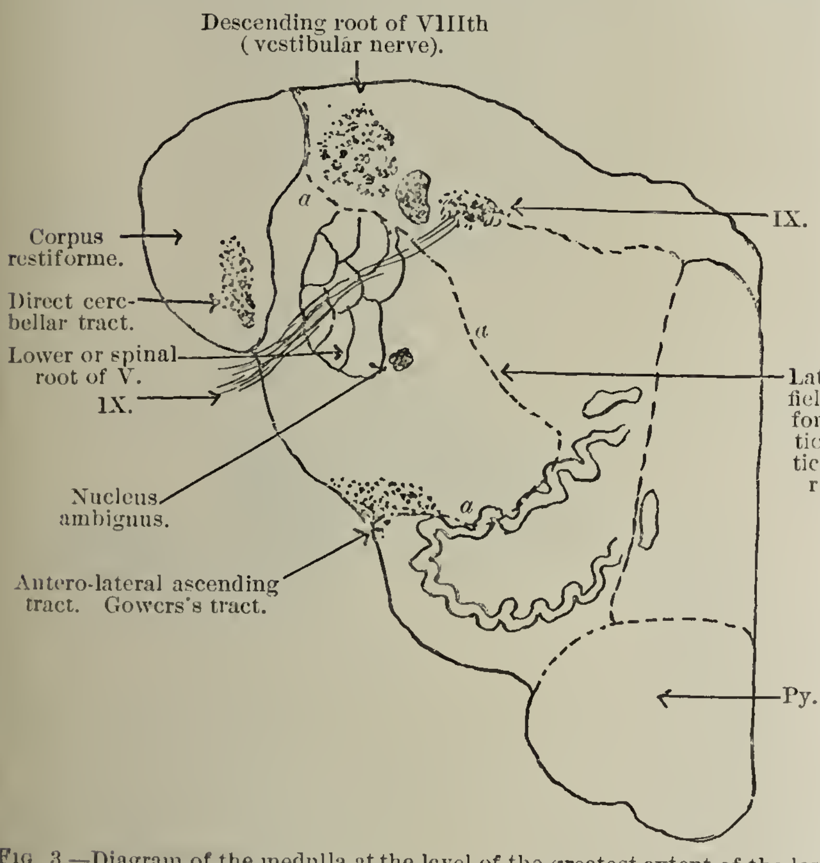
Descending root of VIIIth (vestibular nerve).
Corpus restiforme.
Direct cerebellar tract.
Lower or spinal root of V.
IX.
Nucleus ambiguus.
Antero-lateral ascending tract. Gowers's tract.
IX.
Lateral field of formatio reticularis.
Py.
a
a
a

Fig. 3.—Diagram of the medulla at the level of the greatest extent of the lesion, showing the nerve-fibre tracts destroyed by the latter. The area of the softening is included within the dotted line *a a a*.

In the centre of the softened area, and about the region of the nucleus ambiguus, for a space extending two or three millimetres above and below the plane of Fig. 1, the tissue has a sievelike appearance. It is composed of trabeculæ inclosing irregular cavities, such as are usually found in old cases of softening of the denser parts of the central nervous system. Toward the periphery of the softened area the structure becomes more solid, and joins without any very sharp demarcation with the surrounding normal gray and white tissues of the medulla.

From the plane of the medulla, represented in Fig. 1, the softened area tapers off both cephalad and caudad for approximately three or four millimetres. Both above and below, the upper and lower ends of the softened area can not be located precisely, and the particular planes through the medulla, represented by Plate I, Figs. 1 and 3, below and above Fig. 1, show secondary degeneration rather than actual softening.

We shall first consider severally the nerve-fibre groups, and then the groups of ganglion cells or nuclei damaged or destroyed by this medulla lesion.

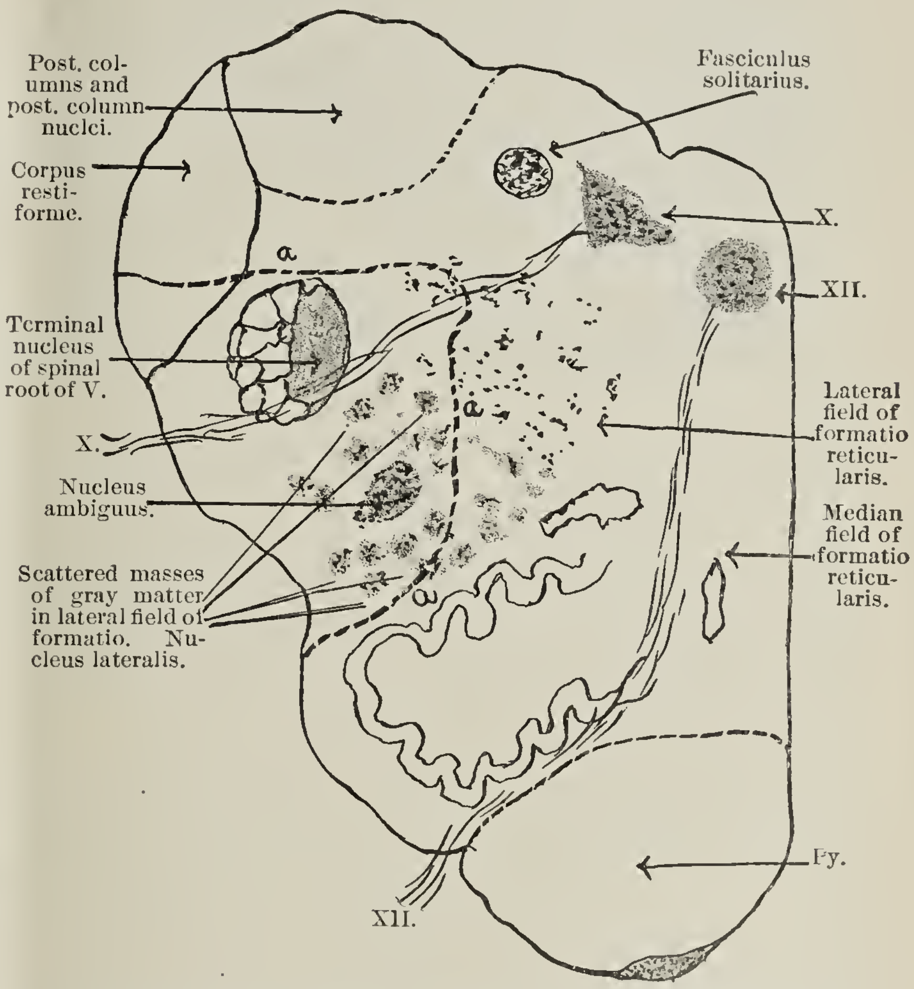
Post. columns and post. column nuclei.
Corpus restiforme.
Terminal nucleus of spinal root of V.
X.
Nucleus ambiguus.
Scattered masses of gray matter in lateral field of formatio. Nucleus lateralis.
XII.
Fasciculus solitarius.
X.
XII.
Lateral field of formatio reticularis.
Median field of formatio reticularis.
Py.
a
a
a

Fig. 4.—Diagram of the medulla near the lower level of the lesion, showing the nuclei destroyed by the focus of softening. The area of softening is included within the dotted line *a a a*.

Near the lower level of the lesion (Fig. 2) the following tracts are destroyed:

1. The outer half of the lateral field of the formatio reticularis fibres, which runs mainly vertically and which may be called an intrinsic fibre system of the medulla.
2. The descending or spinal (Kölliker) root of the fifth nerve (formerly supposed to be the ascending root of the fifth nerve).
3. The direct cerebellar tract (column of Flechsig), which lies in the most lateral and dorsal region of the softened area just ventral to the corpus restiforme.
4. The ventro-(antero-)lateral ascending column (column of Gowers), which lies in the area of softening just ventral to the direct cerebellar tract.

5. Fibres passing between the cerebellum and the lower olives, indicated by the arrows which run across the field of the lesion in Fig. 2.

The discussion of the course and nature of all these fibre systems had best be reserved until the ascending and descending degenerations present in this case have been studied.

Finally, it is to be noticed that the lesion at this level does not destroy the corpus restiforme except to a small extent at the ventral border, neither does it interfere with the lemniscus, the solitary fasciculus (the descending root of the chorda tympani and the vagus), the ninth and tenth nerves, the olivary bodies, nor with the posterior columns and their nuclei graciles and cuneati, the integrity of these latter structures being of especial significance in the subsequent discussion of the symptoms.

The fibres interrupted at a slightly higher level in the medulla, where the lesion has its greatest extent, may be considered next. (Such a level, Fig. 3, is cephalad to the hypoglossal nucleus and to the posterior columns, and the place occupied by these structures in Fig. 1 is taken, in Fig. 3, by the descending root of the vestibular nerve.) In this region precisely the same fibre groups are destroyed as in the previous level (Fig. 2). The two spinal tracts have separated from each other. Flechsig's column lies within the corpus restiforme, and Gowers's tract lies ventrally near the outer bend of the olive. At this level the lesion has completely destroyed the corpus restiforme.

Having described the nerve-fibre groups involved in the area of softening in the medulla, it is next in order to inquire into ganglion-cell groups or nuclei destroyed by the lesion. The lateral field contains considerable gray matter, and for this reason Kölliker terms the field "substantia grisea reticularis," in contradistinction to the median field of the formatio reticularis, which contains but very little gray matter. This gray matter with its ganglion cells is arranged for the most part diffusely throughout the lateral field (nucleus magno-cellularis diffusus Kölliker), but in places the gray matter is collected into more or less distinct masses, which have been dealt with in detail and specialized by Bechterew.* For our purposes it will be sufficient to group these larger masses of gray matter in the lateral field of the formatio reticularis together as the "nucleus lateralis." A portion of this conglomerate nucleus lateralis is destroyed (Fig. 4), and also the motor nucleus of the glossopharyngeus and vagus, or nucleus ambiguus of Clarke, together with the gray matter on the inner border of the descending root of the trigeminal nerve which acts as a terminal nucleus for these fibres. The left olivary body is damaged only at the greatest extent of the softening (Fig. 3). Here the outer half of the dorsal leaf of the olive is somewhat involved. But the damage to the olive is *very inconsiderable.*

The most important tracts of nerve fibres and masses of gray matter destroyed in the area of softening in the medulla have now been described. Before dealing with the ascending and descending degenerations resulting from the destruction of these tracts the areas of softening on the pons and in the cerebellum must be considered.

The Pons Varolii.—The focus of softening in the pons lies in the level between the entrance of the fourth and fifth nerves, in the ventral half of the midpontial region, principally on the right side; a tonguelike portion passes across the median rhaphe and involves a small portion of the left side (Fig. 5). It measures ten millimetres in the lateral, five millimetres in the dorsoventral, and five millimetres in the caudo-cephalic diameter. This area of softening destroys a considerable portion of the pyramidal tract; fully one half of the right side, and a few of the dorsal and median pyramidal fibres of the left side.

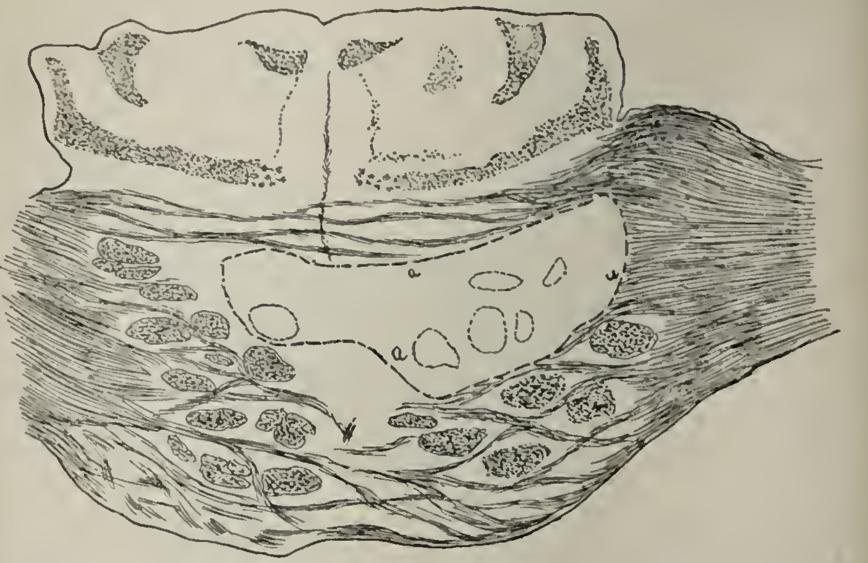

Fig. 5.—Diagram of focus of softening in the pons Varoli, at a level just above the entrance of the fifth nerve. The area of softening is included within the dotted line *a a a*.

The pons lesion also involves certain other tracts. One of these passes upward from the gray masses in the ventral portion of the pons through the outer quarter of the crus and through the internal capsule to the cortex. For a well-marked field of degeneration, occupying the extreme lateral fifth of the right pes cruris cerebri, was present in this case, as shown in Fig. 6. This can be accounted for in no other way than as an ascending degeneration from the masses of gray matter in the ventral pons region. This definitely confirms the result of Bechterew's researches on this tract by the embryological method. Other fibres pass from the pons nuclei to the cerebellum. Still other fibres are supposed to connect the gray masses of the ventral portion of the pons through the rhaphe, with the nucleus formationis reticularis.* Finally, fibres from the frontal lobe, passing

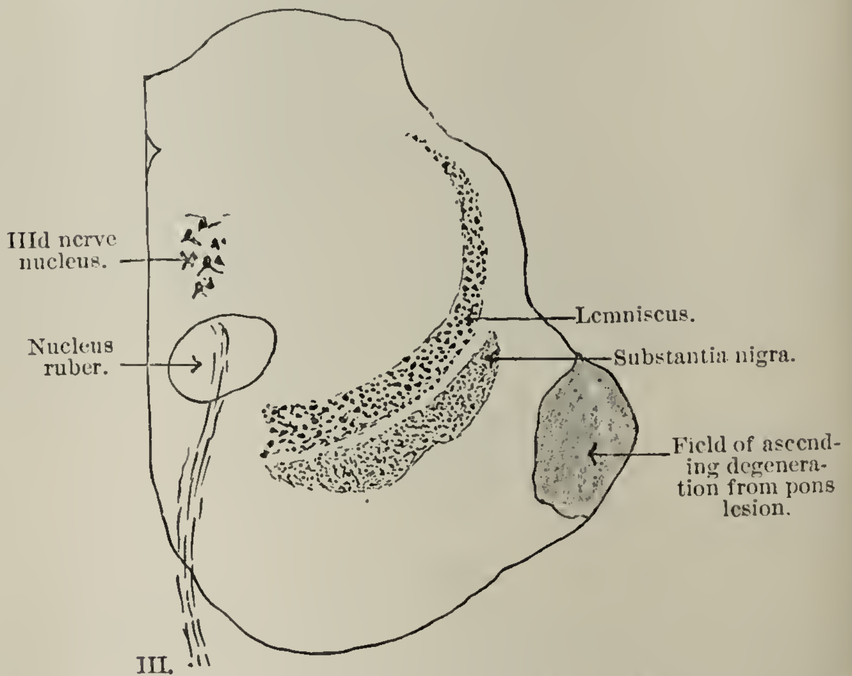

Fig. 6.—Diagram of the right crus cerebri, showing the ascending degeneration in the "pes."

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* *Die Leitungsbahnen im Gehirn und Rückenmark*, 1894, p. 60.

* Bechterew. *Die Leitungsbahnen im Gehirn und Rückenmark*, 1894, p. 106.

through the inner quarter of the crus, run through the transverse pontial fibres to the opposite cerebellar hemisphere. All these tracts are more or less interfered with by the pons lesion, but we know very little about the course of these tracts and almost absolutely nothing about their physiology, and certainly no symptoms in this case could be observed from the interference with these obscure tracts nor are any of the recorded symptoms to be ascribed to the pons lesion, except the left hemiplegia.

The Cerebellum.—The left corpus dentatum is involved by a number of very small foci of softening quite closely approximated, so that in the Weigert's specimens the corpus has a mottled appearance (Fig. 7). The corpus dentatum is quite thoroughly damaged by these multiple foci, which extend beyond it and involve to a certain extent its intraciliary and extraciliary fibres, principally the former. Thus, in the Weigert's sections the dentate body is pale, bereft of its fine, dense marginal fibre plexus, and while here and there between the spots of softening there is an approach to the normal appearance, in the centre of the softened area both the ganglion cells and nerve fibres are more or less completely destroyed. This same lesion involves also to a small extent the lateral (or outer) end of the nucleus emboliformis.

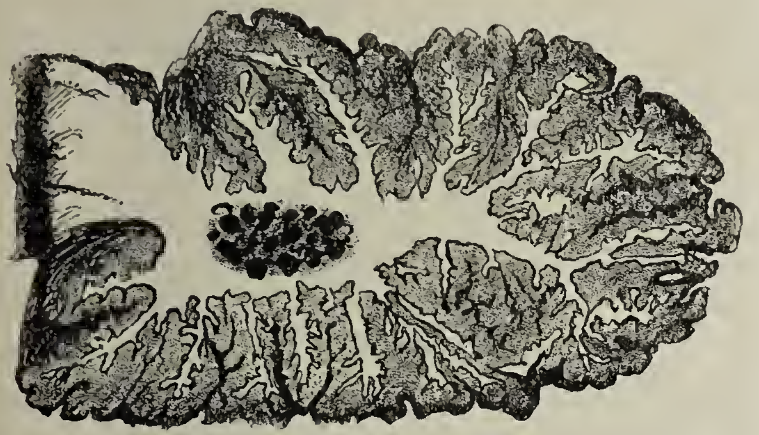

FIG. 7.—Diagram of cerebellum, showing foci of softening in corpus dentatum.

(To be continued.)

A CASE OF UNIOCULAR EPICANTHUS[1].

WITH AN UNUSUAL ÆTIOLOGY.

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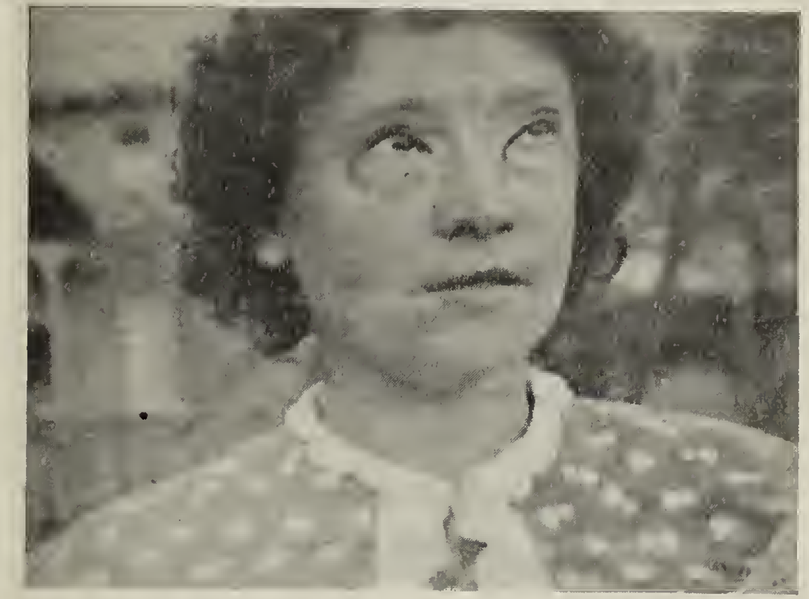
ALTHOUGH the anomaly known as epicanthus is usually found in the Mongolian race as a normal condition, and at times is observed in the Caucasian as a congenital defect, it, however, is not so frequent an occurrence in the last named, and especially from the cause which has been the factor in the herein reported case—viz., sclerodermia.

The patient, a woman twenty-nine years of age, has been an inmate of the Incurable Hospital at Blackwell's Island for the past four years and has suffered with sclerodermia for eight years.

She first noticed the ocular deformity four or five years ago, which progressed slowly in the left eye, and when she first came under my care she appeared as the picture shows.

The right eye is somewhat affected, but the anomaly is so slight that one may say that the eye is normal.

On October 6, 1896, I operated as follows: After rendering the field of operation absolutely sterile, an incision was made in the form of a V, such as is practised in the Wharton-Jones operation for ectropion, but as there was but one eye affected the incision was carried on the affected side somewhat more upward and inward than on the opposite side. The incision began about the middle of the nose and extended on the right side nearly up to the brow. On the other side, as said before, the incision was extended quite up to the brow and then slightly along toward the inner canthus. The flap thus outlined was dissected up, and we undermined the skin on both sides, but more so on the affected side.



After loosening the skin quite freely, the V-shaped flap was exsected, and the edges of the wound were brought together by means of eight silk sutures.

During the operation bleeding was profuse, owing to the great vascularity of the facial tissues. As was to be expected, the skin was extremely hard and tough.

After completing the suturing we applied a collodion and cotton-fibre dressing, omitting the use of a bandage.

No anæsthetic was employed except after making the primary incision, when we employed a few applications of a four-per-cent. solution of cocaine, which, however, was rather ineffective in controlling the pain.

The object of bringing this case before the medical profession is not to advocate any new operative proceeding in dealing with this deformity, but because the defect was uniocular, a circumstance which, to my knowledge, has never before been noted, and at the same time from the unusual ætiology of the ocular anomaly.

137 EAST TWENTY-EIGHTH STREET.

Ichthyol in Smallpox.—"A solution of ichthyol, five or ten per cent., has recently been used with much success as a local application in smallpox, in the pustular stage of the eruption. The solution being painted over the pustules two to four times a day was found to hasten the drying up, check extensive suppuration, and prevent pitting."—*British and Colonial Druggist.*

A Treatment of Epistaxis.—Mr. Jonathan Hutchinson has made a note in his *Archives of Surgery* of a treatment of epistaxis which he avers has never failed of success in his hands, and he has had many very rebellious cases. It consists in plunging the patient's feet and hands into water as hot as can be borne.

THE REFRACTION OF THE EYES OF ONE THOUSAND SCHOOL CHILDREN, WITH PARTICULAR REFERENCE TO ASTIGMATISM, AS SHOWN BY THE JAVAL OPHTHALMOMETER.*

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About a year ago Dr. St. John Roosa suggested to me the importance of statistics of corneal astigmatism as throwing great light upon the study of asthenopia. None of the many school statistics which have been published have treated of the prevalence of corneal astigmatism, for the obvious reason that the ophthalmometer was not in general use in any country until 1890, when it began to be widely employed in our own through the example and efforts of Dr. Roosa. These tables represent the results of the examination which the courtesy of the school trustees enabled me to make last winter and spring of the eyes of one thousand children in the schools of Peekskill, a town of somewhat over twelve thousand inhabitants. The statistics will be found fairly representative of the conditions existing in the eyes of the American school child, although large cities like New York might show somewhat different results in certain details. For instance, the myopic element of refraction is considerably less than I have reason to believe is the case where the children have longer hours of study, less hygienic surroundings, and weaker vitality. Also I might find a higher percentage of pathological changes in the eyes of children from the heterogeneous population of New York tenement houses than I observed in Peekskill, where the foreign element is insignificant, and where village life insures a more healthy environment.

The method of obtaining my statistics was as follows: A room was kindly furnished me by the principal of each school, into which the children were sent two by two as needed. A very good dark room was made by pulling down the shades, and my first step was a careful ophthalmoscopic examination, re-enforced in doubtful cases by retinoscopy. As mydriasis was out of the question, it was impossible to eliminate all chance of the presence of spasm of the accommodation on the part of the patient examined, and of course I do not pretend to any absolute accuracy in estimating the degree or nature of the refraction. Nevertheless, I think the results are as accurate as circumstances permitted. In making a diagnosis of emmetropia I considered all children emmetropic where the retinal picture began to blur at + 0.50 D., while perfectly clear at the aperture of the ophthalmoscope. I did not think that my own personal equation admitted of any closer approximation, although many authorities will probably take exception to this definition of emmetropia.

My second step was to use the Javal ophthalmometer, and this part of the routine I consider the unique feature of my paper. In order to get at the actual amount of corneal astigmatism which is of importance for refractive purposes I decided to follow the example of Javal, and estimate as 0.50 D. the normal corneal astigmatism, which is neutralized by the corresponding lenticular astigmatism at right angles to it, due to the anatomical inclination of the crystalline lens obliquely to the visual axis. That is to say, in astigmatism with the rule I disregarded an overlapping of the mires of 0.50 D., while I added 0.50 D. to astigmatism against the rule, since, in that case, the lenticular astigmatism increases the effect of the corneal astigmatism. In this way the total astigmatism better represents the refraction of the eye than if I had not allowed for the normal corneal astigmatism. In consequence all the children, for instance, under the percentages of emmetropia, are to be considered as showing an overlapping of 0.50 D.

My third step was to use the test letters at a distance of twenty feet, to determine the acuity of vision. This test I have not embodied in my statistics, because I consider tables of percentages of "defective sight" to be too indefinite and inexact to find a place in an article addressed to the profession. Normal vision in the first place is surely not exactly $\frac{20}{20}$, even if by that is meant the vision of the emmetropic eye. I think under favorable circumstances of good light, absence of all deviation from perfect health, and patience and skill on the part of the examiner, the emmetropic eye is often capable of seeing $\frac{20}{15}$ with ease, although at other times the vision may drop to $\frac{20}{20}$, or even $\frac{20}{30}$, in the same eye if the circumstances are adverse. The least suspicion of hypermetropia is sufficient to put the vision beyond $\frac{20}{20}$, but, of course, we expect that to occur in such cases. If by normal vision is meant useful vision without asthenopia of $\frac{20}{20}$, we can not help finding such vision frequently in varying states of refraction—in emmetropia, in low degrees of astigmatism, both hypermetropic and myopic, and also sometimes, I believe, in the incipient stages of myopia. I found the test of acuity of vision extremely useful as an aid and check to my ophthalmoscopic examination, but for the reasons given I decided not to add another item to my tables.

Finally, my routine was completed by observing any pathological changes or abnormities of the eyeball or its appendages. In this I was gratified to find exceptionally few pathological or abnormal eyes. In great degree I believe it to be due to village life and vigorous native stock. I found few cases of trachoma, in striking contrast to its prevalence in our city clinics. Blepharitis marginalis was the most common disease observed, and I am sorry to say I noticed many cases of asthenopia, due to the lack of proper correction of refractive error. Perhaps this fact can be explained by the presence and activity in our village of "refracting opticians" and other venders of optical goods. The most common and perfectly natural mistake made by these gentlemen seems to be placing a weak minus spherical glass over the eyes of children having hypermetropic astigmatism of moderate degree. The correct diagnosis of astigmatism is naturally entirely beyond their power, as they possess neither the appliances nor the skill for accomplishing such a difficult task. The law is plain on this subject. No one not licensed by the regents can legally practise medicine in this State, and to prescribe a pair of lenses after an examination of the eye is to practise medicine. But the people need to be aroused to the necessity of enforcing this law. Perhaps the day may come in the future when the examination of the most delicate and sensitive, and in many ways the most important organ in the human body will be recognized by the intelligence of the people to be a part of medical practice, and the prescription of a pair of lenses by a layman as much an offense against the rights of the community as the prescription of a powerful medicine by a druggist is now admitted to be. I have thought my observation of the prevalence of marked asthenopia so important that I have made a place in my statistics for its percentages. Chorioiditis was occasionally noticed, but in general the fundus of the eye presented a perfectly healthy appearance. Of course a few cases of strabismus were encountered, and also an occasional scar due to old traumatism. I am very sure an equal number of city children would have presented many more abnormal and diseased eyes, but our village seems to me fairly typical in this respect of suburban and rural populations.

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* Read before the Ophthalmological Section of the New York Academy of Medicine, January 18, 1897.

Before passing to comment on the tables herein given, perhaps my usage of one or two terms may need a word. I have classified as anisometropia all similar differences of refraction of one dioptre or over, and I have also given separate items for cases where the difference existed in the astigmatism and where it was due to hypermetropia or myopia. Antimetropia I have limited to dissimilar or opposite states of refraction, but I have included in that definition cases where one eye was apparently emmetropic and the other pronouncedly myopic or hypermetropic.

Table I.—*Percentages of 1,000 School Children.*

	Ages 5–18.
Emmetropia	13·90
Hypermetropia	36·20
H. Ast. Co.	44·00
Myopia	1·40
My. Ast. Co.	3·50
Mixed astigmatism	1·00
	100·00

Table II.—*Percentages of 1,000 School Children.*

	Ages 5–18.
H. + H. Ast. Co.	80·20
H. Ast. Co. + My. Ast. Co. + Mix. Ast.	48·50
My. + My. Ast. Co.	4·90
My. + My. Ast. Co. + Mix. Ast.	5·90
Astigmatism, a. t. r.	2·90
Ast. $\frac{1}{4} - 1\frac{1}{4}$ D.	34·40
Ast. $1\frac{1}{2} - 2\frac{3}{4}$ D.	10·30
Ast. 3 D. +	3·80
Anisometropia	11·20
Anisometropia H. or My	4·40
Anisometropia Astig	6·80
Antimetropia	1·10
Marked asthenopia	0·70
Pathological cases	2·60

Tables I and II, giving the percentages of all ages, will receive only a few words of comment. Except in the appearance of the items relating to the classification of astigmatism, they are not markedly different from similar tables of Loring, Noyes, Risley, Southard, and others. Table II is largely formed by combining and subdividing the items of Table I, to bring out more clearly the astigmatic element in the refraction. I would call attention to the fact that 48.5 per cent. of all the children examined were astigmatic, of which hypermetropic astigmatism compound claims forty-four per cent. It is also interesting that hypermetropic astigmatism compound outnumbered hypermetropia, forty-four per cent. as compared to 36.2 per cent., and still more important to notice that the percentage of myopic astigmatism compound is nearly three times as great as that of myopia. In subdividing the astigmatism the low degrees are overwhelmingly prevalent, 34.4 per cent., while moderate and high degrees are 10.3 per cent. and 3.8 per cent. respectively. Many of these children having low degrees of astigmatism undoubtedly had little or no asthenopia, and most of them were not wearing glasses. But, as I hope to show further on in my paper, such eyes are defective and weak, and will surely give the owner trouble later in life. The presence of astigmatism against the rule in a considerable number of cases is of interest. In anisometropia it is seen that the difference in astigmatism occurs more often than the difference in hypermetropia or myopia, 6.8 per cent. and 4.4 per cent. I should like to comment further on the remaining items in these two tables, but must hurry on to the more important tables III and IV, where comparative percentages by ages are given.

Table III.—*Percentages by Ages of 1,000 School Children.*

Ages:	5–8.	9–12.	13–18.
Emmetropia	10·00	16·43	14·33
Hypermetropia	53·48	37·27	22·81
H. Ast. Co.	33·48	40·05	55·55
Myopia	0·87	1·85	1·17
My. Ast. Co.	1·74	3·01	5·26
Mixed Ast	0·43	1·39	0·88
	100·00	100·00	100·00

Tables III and IV corroborate in a remarkable manner the conclusions and views expressed by Dr. William F. Norris, in a paper published in the *Transactions of the American Ophthalmological Society* at its twenty-second annual meeting, on The Changes in Refraction in Adolescent and Adult Eyes. Dr. Norris there shows that congestion of the retina and sclerotic, if repeated at frequent intervals, will cause the undeveloped hypermetropic eye of childhood and adolescence to undergo a slow distention even under normal intraocular tension.

Table IV.—*Percentages by Ages of 1,000 School Children.*

Ages :	5-8.	9-12.	13-18.
H. + H. Ast. Co	86·96	77·32	78·36
H. Ast. Co. + My. Ast. Co. + Mix. Ast.	35·65	44·45	61·69
My. + My. Ast. Co	2·61	4·86	6·43
My. + My. Ast. Co. + Mix. Ast.	3·04	6·25	7·31
Astigmatism, a. t. r	1·30	2·78	4·09
Astig. ¼ — 1¼ D.	23·48	32·18	44·15
Astig. 1½ — 2¾ D	9·56	7·87	13·74
Astig. 3 D. +	2·61	4·40	3·80
Anisometropia	5·65	10·88	15·14
Anisometropia H. or My	2·17	4·17	6·14
Anisometropia Ast.	3·48	6·71	9·00
Antimetropia	0·87	1·62	0·59
Marked asthenopia	.....	0·23	1·75
Pathological cases	2·17	3·01	2·34

Any morbid condition coexisting makes this process more sure and rapid. The eyeball yields most promptly and effectively, as Dr. Norris states, at the posterior pole, where its anatomical structure allows a maximum of serum infiltration and a minimum of resistance, due to the passage through the sclerotic of the numerous posterior ciliary vessels and nerves. It follows from these facts that we must regard an increase of myopia to be but a more advanced stage of a process to which a decrease of hypermetropia belongs, and that for many children emmetropia is but a mere halting place on the road to the goal of myopia. It may be objected that this theory proves too much. All myopia is not "school myopia" brought on by asthenopia. There is, indeed, an essential myopia seen in illiterates, criminals, and others. But the process is the same, although the existing cause is entirely different. Instead of excessive strain causing distention in an otherwise healthy eye, the illiterates, criminals, and others suffer from tissues made weak and easily distensible by inherited or acquired disease. Besides local diseases, such as chorioiditis, any constitutionl diathesis or dyscrasia may so weaken the eye that the physiological activity of daily life will be sufficient to cause distention. Indeed, I understand that statistics of prisoners show nearly if not quite as high a percentage of myopia as the schools. But I believe all such eyes will be found either themselves diseased or in diseased bodies.

My tables show that the distention of the eyeball is nearly as disastrous to the cornea as to the fundus itself. We have long considered hypermetropic astigmatism to be congenital and fixed, and when we had reason to think otherwise we were apt to doubt our observation or put it down as a rare exception. I think my statistics prove that it is often neither congenital nor fixed. To be sure, it does not change as rapidly or as surely as myopic astigmatism, but then the latter is a later stage of the same process. The reason we have not observed more changes in degree of hypermetropic astigmatism is that the process is quite amenable to treatment in its early stage, proper correction of the refractive error arresting usually any increase of the astigmatism. Myopic astigmatism with considerable myopia represents the later stage of the process, where exact correction is not so much insisted upon by the patient, due to the absence of asthenopia, and where also often correction is of less avail to arrest the increasing distention. It has been well shown by Ely and others that babies are born hypermetropic, and, as numbers of them probably have imperfectly curved corneæ, a considerable amount of hypermetropic astigmatism is undoubtedly congenital. I believe that a still larger amount of hypermetropic astigmatism is acquired during the years of childhood and early adolescence, and I think my statistics sustain that belief.

In making the subdivisions of Tables III and IV I endeavored to divide the ages so as to give approximately the same number of pupils in each subdivision. The Peekskill schools not being graded, I did not follow the class divisions. The first item of Table III shows that the lowest percentage of emmetropia belongs to the younger children and the highest to the middle subdivision. This is apparently in harmony with the view of emmetropia being an arbitrary distinction in many eyes, for a gradual lengthening of the optic axis would give the largest percentage of emmetropia in the ages of nine to twelve. Hypermetropia is shown to decrease in percentage rapidly, and according to my opinion much of the decrease is due to the appearance of astigmatism in eyes formerly with perfect corneæ.

Compound hypermetropic astigmatism increases almost as rapidly as hypermetropia decreases, for the reason given above. Myopia is seen to be of largest percentage in the middle subdivision, and this fact, I believe, is due in part to myopia becoming compound myopic astigmatism in many of the older children. Some statistics of San Francisco schools, collected by Dr. W. F. Southard, show the attendance in primary grades to be 69.63 per cent.; in grammar schools, 26.06 per cent.; and in high schools, 4.31 per cent. This astonishing disproportion of the grammar and high schools, as compared with the primary grade, leads me to believe that many children drop out as they grow older because large refractive error prevents them from keeping up in their studies. The next item gives an increase of three times as much compound myopic astigmatism in the ages thirteen to eighteen as occurs in the ages of five to eight, thus showing that compound myopic astigmatism increases much faster than myopia. Mixed astigmatism, by giving the highest percentage for the middle subdivision, shows itself to be similar in that respect to emmetropia. The second item of Table IV proves, in my estimation, the steady alteration of the curve of the cornea as the child grows older and uses the eyes for longer and closer study. The subdivision of astigmatism according to degree shows the low degrees to increase steadily, while the moderate and high degrees are more numerous in the middle subdivision of age. This fact I believe to be due, as in myopia, to high refractive error causing children to drop out. The same is true of antimetropia, and for the same reason probably. Astigmatism against the rule and anisometropia seem to increase as steadily as the more common refractive conditions, if not even faster.

I suggest the following conclusions:

I. Changes in refraction of childhood and adolescence are due to slow distention of the eyeball, caused either by strain of accommodation in an otherwise healthy eye or by physiological use of an eye weakened by local or constitutional disease or dyscrasia.

Poor light in crowded schoolrooms is particularly productive of strain of accommodation, as was shown by Arlt, of Vienna, in an able monograph.

II. Such distention of the eyeball results not only in progressive lengthening of the optic axis, but in alteration of the curve of the cornea.

III. A considerable proportion of hypermetropic astigmatism is probably congenital, but much the larger proportion, and all of the myopic and mixed astigmatism, are caused by the same process which lengthens the optic axis from the congenital high degree of hypermetropia of infancy to the high degree of myopia seen typically in German universities and occasionally in our schools.

IV. This process of distention is more easily arrested in its earlier stages, and therefore prompt and exact correction of the refractive error, and particularly of low grades of astigmatism, is indicated in all cases to prevent an extension of the process. In compound myopic astigmatism correction of the astigmatic element is of equal if not of greater importance than correction of the myopic element of the refraction.

I hope to keep track of as many as possible of the one thousand children examined, and some time in the future I may be able to demonstrate the changes of refraction by comparing records of the same individuals taken at different times.

The conclusions I have formulated apply with particular force to the plastic period of growth, when the eyeball is soft and yielding—that is to say, to the years of childhood and early adolescence. In adult life the eyeball has become mature, and therefore is firm and resistant. In consequence the refraction of adults does not change in anything like the frequency observed in childhood. We often notice marked increase of myopia, or of myopic astigmatism, in adult eyes, but emmetropia and hypermetropia, as well as hypermetropic astigmatism, are usually fairly constant in healthy adults of normal vitality. The fate of the refraction of the eye is usually settled before puberty. Childhood is the critical period of growth. If that period is passed without undue distention, myopia and astigmatism are not likely to develop at all in after life.

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EPILEPSY AND EYE STRAIN.

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Just at this time it seems proper to report cases of epilepsy relieved by eye treatment. The following reports are brief, but fuller details can be obtained by the reader if desired.

Case I.—Vance E. A., aged twelve years, referred to me by Dr. J. W. Skinner on July 30, 1892. Family history negative, he being an adopted child.

General History.—Eyes ache while reading. Has had epilepsy for the past year. Convulsions were mostly nocturnal but frequent, except a few which occurred in the daytime, but were typical.

Eye defects.—R. V. = $\frac{20}{20}$ +. L. V. = $\frac{20}{20}$ +. Not improved with glasses, but under atropine, R. V. = $\frac{20}{100}$ = $\frac{20}{20}$ + w. + 1·50 D. L. V. = $\frac{20}{100}$ — = $\frac{20}{20}$ + w. + 1.50 D. Esophoria, 1°; abduction, 3°; almost homonymous diplopia; hyperphoria, 0; visual field normal; general condition good.

Treatment.—Adjusted glasses to correct the hypermetropia, to be worn constantly, and performed tenotomy of both interni at different times. Gave no medicine. Case under observation until May 2, 1895.

Report, after first treatment, September 30, 1892, of having had one convulsion, also one aura, about five weeks prior, and to have had none since, and at date of this writing the patient considers himself perfectly well.

Case II.—W. M. K., aged five years, was brought to me October 4, 1893, with a history of having had convulsions for the past three months, diagnosticated by two physicians who preceded me as epilepsy. I was present during two or three of the attacks, and feel sure about the diagnosis. Attacks were frequent. Family history neurotic.

Treatment.—Prescribed calomel and santonin, which relieved the intestinal tract of a large number of pinworms (oxyuris) I also circumcised the child, and later found eye defects to be—Javal, R. 1.50, 90° or 180° W. R.; L. 1.75, 90° or 180° W. R., after repeated tests.

Could not determine vision on account of age and bluntness of mental condition, neither could I determine muscular balance. I prescribed the cylinders found with Javal's ophthalmometer, with instructions to wear them constantly, which was not, and could not be, followed out. The case was under observation for about two years without improvement and then drifted from my care, but from observations at my command I have always believed that had the patient been older and more tractable, so that a careful examination of the eyes could have been made, the result would have been different.

Case III.—Geo. H. V., aged eighteen years, came to me August 4, 1892, complaining of headaches and eyes smarting and burning. There were no other symptoms. Upon examining his eyes under atropine I found

R. V. = $\frac{20}{70}$ = $\frac{20}{20}$ + w. + ·62 $\bigcirc$ + ·50, c. ax. 90°.
L. V. = $\frac{20}{70}$ = $\frac{20}{20}$ + w. + ·50 $\bigcirc$ + ·50, c. ax. 90°.

There was a family history of headaches. I prescribed the cylinders to be worn constantly, which he would not do. He soon after connected himself in business with a company in Brooklyn, N. Y., and passed from my care.

On Christmas of 1893, while standing by an elevator, he believed he was struck by the descending car and rendered unconscious, but no scars were found about the head or elsewhere. Soon recovering from this, nothing was thought of the matter until about one month later, while on the street in New York, he stooped over to tie his shoestring and remembered nothing more until he found himself in the police station, having been arrested for drunkenness. About March 1, 1894, he had another attack while friends were present, and a physician was called and a diagnosis made of epilepsy, and he was advised to leave his work and return to his home, which he did. Upon his arrival his father brought him directly to my office. From the family history and previous examination I gave it as my opinion that his trouble came from eye defect. I was laughed at and the patient taken elsewhere. As I was living in the immediate neighborhood, reports came to me often of his condition. Attack after attack occurred, scaring his people and friends, with every positive symptom of *grand mal*. His mental condition becoming so disturbed, his father (a friend of mine) approached me about the last of November, 1895, stating that he felt that he must take him, his only boy, to an asylum.

On December 10, 1895, while Dr. R. T. Morris, of New York, was in our city, he was consulted to eliminate the possibility of there being depressed bone. During all this time the patient had been taking bromides, etc., from every physician, regular, irregular, and defective. Dr. Morris's examination revealed nothing abnormal about the head, but he referred him to me to have his eyes examined.

Javal, — 90° or 180° W. R.; 25, 90° or 180° W. R.
R. V. = $\frac{20}{15}$ = $\frac{20}{15}$ w. + ·50 $\supset$ + ·50, c. ax. 180°.
L. V. = $\frac{20}{15}$ = $\frac{20}{15}$ w. + ·50 $\supset$ + ·25, c. ax. 180°.

Orthophoria. I did not use atropine this time, but prescribed glasses, as above, for constant use. His health returned at once. He had no more convulsions. He occupied a public position in 1896, and has never taken any medicine since, and is perfectly well in every way. Changed his lenses on May 21, 1896. I saw the patient to-day, and he said, "Refer anybody to me."

Patient and family remember very well his having fourteen convulsions in the daytime.

Case IV.—Miss D. M. L., aged sixteen years, sent to me by Dr. M. A. Dumond, of Spencer, N. Y., on February 6, 1894. She had been subject to frequent epileptic convulsions for the past four years, until her mind was blunted to such an extent that she was unable to answer questions intelligibly.

Dr. Dumond had relieved preputial adhesions upon her first visit to him, and then referred her to me to relieve the suspected eye strain, dispensing with all medication, which she had been constantly taking during her entire illness. Family history negative.

Eye defects: Javal, R. 2.00, 80° or 170° W. R.; L. 2.00, 100° or 10° W. R.
R. V. = $\frac{20}{70}$ = $\frac{20}{20}$ — w. — 1·50, c. ax. 170°.
L. V. = $\frac{20}{70}$ = $\frac{20}{20}$ — w. — 1·50, c. ax. 10°.

Orthophoria. Prescribed cylinders as above, to be worn constantly.

In a report from Dr. Dumond to-day, January 11, 1897, he says that the convulsions were lessened more than one half, that her physical condition was much improved, that he kept her under observation for one year, not giving any medicine. She was constantly improving mentally, when suddenly she was stricken with a cerebral embolism or some other complication of heart disease, and died without a diagnosis having been made.

The above-cited cases are the only epileptic cases that I have been called upon to treat for eye strain, and the results as shown are worthy of consideration.

I am a firm believer in the idea that peripheral irritations cause many of our nervous troubles, and that eye strain is the most prominent.

I believe that cases should be cared for early, before neurotic effects become permanent.

January 11, 1897.

TUBERCULOSIS,

WITH SPECIAL REFERENCE TO ITS PREVENTION AND TREATMENT.*

By E. A. EDLÉN, A. B., B. S., M. D.,
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It is remarkable that a disease like tuberculosis, which is generally acknowledged by the medical profession to be infectious and contagious and whose ravages are so immense, has received such insignificant attention by the legislative authorities of the United States, as well as throughout the whole world. Other diseases, both infectious and contagious, which have a considerably smaller death-rate, have been recognized as inimical to public health and welfare. Stringent laws have been enacted with a view to their extermination or prevention of spreading in case of appearance. Incalculable are also the good results from such a procedure. But when we perceive the favorable results obtained by quarantine and strict observation of sanitary rules with regard to diphtheria, small-pox, cholera, and such, we should urge that equally stringent laws be adopted for the extermination of a disease which shows a death-rate of about one fifth of all causes.

I am well aware of the fact that popular opinion is not in favor of any restriction touching upon tuberculous persons. But popular opinion is subject to change, and it is possible to educate the people in this direction. If once the generally prevailing aversion is removed, a great step has been taken toward the eradication of tuberculosis. When people are convinced that it is for the good of humanity to place a restriction upon a few, and that certain rules should be observed by tuberculous persons, both for their own good and for that of those with whom they mingle, neither the people in general nor the affected ones would consider such measures odious or burdensome.

It would probably be a vain attempt to enact any radical laws right at once, until people could be made to comprehend their import, especially as there is as yet a respectable minority among the medical profession that would act in unison with the people and refuse to recognize any good from such legislation. Furthermore, there would be large expenses connected with the execution of effective measures in that direction, and unless the government would bear these expenses they could not be carried out. Of course, the outlay would be heaviest at the introduction, and could not well be borne by those upon whom it would fall.

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* Read before the Iowa and Illinois Central District Medical Association, January 28, 1897.

Let us see where we should begin. It is admitted as a fact that about twenty-five per cent. of the cattle are affected with tuberculosis. It is also a fact that a large percentage of tuberculosis in man has its source from cattle, from either the milk or the meat, or even by being in contact with the tuberculous animal itself. Now, in order to prevent infection or contagion from cattle, it would be necessary to exterminate all that were tuberculous. Still, that would not be sufficient. In many instances it would be obligatory to destroy the stables where such cattle have been housed, or take other precautions to prevent the propagation of the disease among cattle. Such a wholesale destruction would be ruinous to a great many cattle men and farmers, although future improvement in the remaining stock would to a great extent offset the immediate loss. There would be serious objections raised, particularly as in some herds nearly fifty per cent. are affected. However, in order to insure success in the eradication of tuberculosis, the sacrifice would have to be thorough. Nor would it be well to stop there, as the eradication of tuberculosis among cattle could not be made at one blow. There would have to be a continuous supervision by cattle inspectors for a number of years, and any appearance of the disease stamped out as soon as it was diagnosticated. By taking such measures we should certainly be rid of a very prolific source of the scourge.

In order that such a law, if enacted, might be carried out to its fullest extent, without attempts at evasion, and that least opposition should be encountered, the government would have to defray the greatest part of the expenses. Many millions of dollars are yearly expended by the government for purposes that are considerably less useful, as compared to what the results of the eradication of tuberculosis among cattle would show. No law ever enacted has had such a tremendous bearing on life and health, as well as on the future of humanity, as this one would manifest. The death-rate of tuberculosis in man would in all probability at one step be reduced by one half. This would be of the utmost importance, knowing that to-day the amazing number of five millions of the inhabitants of the United States are affected with the disease. No more milk, swarming with tuberculous bacilli, would cause disease and death. The meat could be eaten without fear of tuberculous infection, as none should be placed on the market before being pronounced sound by meat inspectors. Then, also, the great death-rate among children from other causes would be diminished, as the health would not have been undermined and the body rendered an easy prey by drinking milk from tuberculous cows.

It is self-evident that such a law would show remarkably good results, and that mankind would be protected from an enemy whose poison has from time immemorial been a menace to health and well-being, and caused death and desolation to untold millions of human beings. The great struggle carried on by the human race is severely impeded by this scourge, and no sacrifice is too great, provided it leads to victory over this fateful enemy.

Now, a law with regard to the extermination of tuberculous cattle would be good so far as it went; but something more is to be done. Tuberculous persons are a great menace to other people. Still, nobody could be rash enough to advocate but the most humane and considerate rules in instituting preventive measures against the propagation of the disease by such persons. Tuberculosis has so long been regarded as a necessary evil that any attempt at personal restriction will be looked upon with suspicion and call forth severe criticism. Even sound advice is apt to prove futile in many instances. However, some States have already enacted certain laws which are a step in the right direction, but, although they are conducive to some good, the very fact that they are incomplete defeats their purpose. Yet, however lenient they are, they have evoked sharp criticism, even from medical men, as infringing on personal freedom. I admit that it is difficult to please everybody, as all are not able to view a fact in the same light. Furthermore, our selfish nature is loath to consider anything permissible that would in any manner cause inconvenience to ourselves and benefit others.

Some will point to Nature's law of "the survival of the fittest," and say it is well that the weak succumb. But who will question the great probability that often the fittest do succumb from a subtle cause, like tuberculosis, which at some moment when the normal action of the human mechanism has been disturbed by some other cause gains entrance into the system and begins its deadly work? No one is able to present a true picture of what mankind would have looked like to-day had tuberculosis been unknown, nor could one count those pale, emaciated human sufferers it has brought to an untimely death. Although these spectres have haunted mankind all over the face of the earth for thousands of years, very little or nothing has been done to stem its progress.

Undoubtedly, medical science has done much to alleviate the suffering, and is fighting bravely with a ray of hope to conquer, but, unless some effective legislation is brought to bear on eradication, the fight can at best be on the defensive, and no decisive victory can be hoped for. With sound laws and regulations as to the restriction of the propagation of tuberculosis, coupled with medical science, there is a great probability that a coming generation would be comparatively free from the greatest enemy to the health of the human family.

It is difficult to propose any laws and regulations that would infringe least on social freedom and cause the smallest amount of expense, and at the same time be of the greatest benefit. Yet the following propositions may not be inadmissible:

1. Tuberculous cattle must be destroyed.
2. Every case of tuberculosis must be reported to the board of health.
3. The board of health shall furnish the affected person or his family with instructions how to avoid spreading the disease, and information as to what would be best for his personal comfort and for that of his companions.
4. Expectoration by tuberculous persons on streets, public places, conveyances, and generally anywhere, except in a receptacle for the purpose, is forbidden.
5. Marriage by a tuberculous person is prohibited until all signs of the disease have disappeared.
6. All houses where tuberculous persons have dwelt or died, as well as all articles and clothes used, must be disinfected or destroyed.
7. A board of health or a special inspector shall be appointed for each county or city, whose duty it shall be to make frequent examinations of the school children, and those affected should be isolated so far as it can be done.
8. A special cattle inspector shall be appointed for each district, whose duty it shall be to make frequent examinations of the cattle, and, if any are found to be tuberculous, order such to be killed and destroyed.
9. The appointment of these officers shall come under the civil-service reform rules.

These are a few propositions which certainly could be improved, but which, if brought into practice, would, in my estimation, be conducive of much good, without being to any great extent inimical to popular ideas of social rights and individual freedom.

A great many, among the medical profession as well as among the laity, would object that it was useless to try to eradicate tuberculosis, on account of its universal prevalence as well as the tenacity of life of the tubercle bacilli. Now, it is reasonable to expect that such propositions as those cited, or any similar ones, would tend to restrict and annihilate the offending bacilli, and their reduction and restriction would be greater from time to time as their condition for existence and propagation became more unfavorable. Such regulations would in a comparatively short space of time convince the most skeptical person of their utility and *raison d'être* by their results.

Why should we question that any good could be effected by laws with respect to the eradication of this disease, when we have seen the remarkable success in cases of small-pox, for example? I admit that medical science, through the discovery of vaccine by Jenner, has triumphed over this disease; but had not the legislative powers come to its aid, a very limited amount of good would have resulted, as people in general would be very reluctant in submitting to vaccination without compulsion. The ravages of cholera have been shorn of their terrors by quarantine laws. Only a few years ago we were threatened by this enemy, and but for the vigorous fighting against its inroads by the aid of laws and regulations were we able to choke it in its infancy. Had we not had the quarantine laws, cholera would soon have spread death and misery throughout the United States and become endemic. Why, then, should tuberculosis, a disease infinitely more direful in its consequences, be allowed to continue its ravages without any opposition? It is time to wake up and look at the question in all its seriousness. The medical profession is the proper body to present this matter before the people and the legislative authorities of this country. It is the sacred duty of the devotees of medical science to educate the people, so that a general willingness may be shown toward preventive action and eradication of this universal disease by the aid of sanitary laws.

So far as individual prevention is concerned, some practical hints may have their legitimate place here. Sunlight, fresh air, and exercise are great and powerful enemies to tuberculosis. The more natural the mode of living the greater is the freedom from the disease. A healthy and vigorous body is no breeding ground for the bacilli, while a person whose health is undermined is an inviting pasture and becomes an easy prey. Simple and wholesome food is of major importance in the conservation of health and vigor, as are also cleanly habits and avoidance of living with tuberculous persons or in houses where tuberculosis has existed, unless a thorough disinfection has been made. It has been demonstrated time and again that persons moving into houses where such a disease has existed will be infected and die from the same malady often in a short time, wherefore the utmost carefulness in selecting a dwelling is necessary in order to avoid infection. Indulgence in excesses of whatever kind facilitates the advance of tuberculosis into the system, and ought, therefore, to be avoided so far as possible.

The treatment and cure of tuberculosis have been uppermost in the mind of the medical profession for centuries. Now and then a sure cure or a specific has appeared, only to deepen the despair of success. Scientific researches and human ingenuity have availed very little so far, although it must be admitted that the gloom has recently been pierced by a ray of hope which will admit of a possibility that we may yet triumph over the disease. The antitoxine theory is undoubtedly the correct one. But as yet no brilliant success has followed the efforts in this line. However, there lies a world of possibilities dormant in this line of researches, and we may in the near future be able to bring forth the remedy so earnestly sought for. But until this appears we shall have to use the existing therapeutic agents.

The hygienic conditions are of great importance in the treatment of tuberculosis. Fresh air, sunlight, suitable climate, exercise, wholesome, easily digested, and assimilated food, as well as proper clothing, all play an important rôle in the treatment, and ought to be uppermost in the mind of the medical adviser. Self-infection should be guarded against by minute cleanliness, by destruction of the sputum, and by advice against swallowing it, which will not only cause digestive disturbances but also reinfection.

Many drugs have been tried, and some have been found to possess valuable properties. Yet only very few have been of real utility. Among these, creosote, guaiacol, and strychnine are the most important, as they seem to exert a most decided influence on the life of the tubercle bacilli, as well as on the human system as a whole. It is not necessary to enter into any extensive discussion on these drugs, as their properties and action are well known. Creosote and guaiacol sometimes disturb the action of the kidneys; the stomach once in a while does not take kindly to them, and they may cause injury to the mucous membrane unless they are diluted. Water is a very poor solvent and ought not to be used except as a diluent. I have succeeded in obtaining a perfect and stable solution, which is represented by the following formula:

℞	Creosoti fagi	℥ j;
	Guaiacol	ʒ iv;
	Alcoholis	℥ iv;
	Glycerini	℥ viij;
	Ex. aurantii fl.	℥ ij;
	Saccharini	gr. xv;
	Vini xerici	q. s. ad O ij.

M. Sig.: Two drachms in a glass of water after meals. Increase one drachm a day up to one ounce at a dose.

This solution has given me more satisfaction than any other preparation of the kind. The taste is not very repugnant. Digestive disturbances are rare. The bowels become regular. Appetite is increased, and a general feeling of well-being is induced in a short time. The glycerin seems to be a valuable agent in this preparation, as it is both a food and a regulator of the bowels. The amount of alcohol is not large enough to disturb digestion, but is sufficient for stimulation. Furthermore, this solution is less apt to injure the action of the kidneys. In only two cases of far-advanced tuberculosis with chronic kidney disease has it disagreed. On the whole, it seems to have greater effect on the disease than when creosote or guaiacol is given undissolved or in pills. The various preparations of these drugs are of inferior value, as their therapeutic action is weakened. Another objection to their use is their costliness. Creosote and guaiacol are nearly specific in scrofula, and a cure is sooner effected with them than with any other drug. No other medicine has in my hands been of greater service in this disease.

Strychnine is also a valuable agent, and tends to hasten the cure or improvement, when given in conjunction with the above-mentioned drugs. Its beneficial action on the nervous system is well established. Iron, quinine, and arsenic are also of utility, especially in anæmic subjects. Hydriodic acid acts favorably and may be used with advantage in scrofulous children. Protonuclein and nuclein are of decided value, and are well suited in cases where the kidneys are diseased and where creosote is not well borne. I have almost entirely discarded the administration of cod-liver oil. I admit that it may do good in certain cases, but it so often disturbs digestion that it had better be left out. Anything that has a deleterious effect on the digestive apparatus should be studiously avoided. If the digestive organs can be invigorated, there is great hope of improvement of the whole system.

ACUTE MILIARY TUBERCULOSIS:

THE DIAGNOSTIC VALUE OF "SUBPLEURAL FRICTION."

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THE clinical picture of acute miliary tuberculosis is not so sharply drawn that the reporting of only a single example of the disease is superfluous. Moreover, in the present instance a few peculiar features were noted, which may endow the narrative of the case with a slight additional interest.

The patient, J. E., was a married man, twenty-five years of age, a painter by occupation. His father, still living, is a drunkard; the mother died of dropsy, a sister of consumption. He had had scarlet fever, diphtheria, and, possibly, typhoid fever; had never suffered from lead poisoning, and had used tobacco and alcohol in moderation.

He was first seen on July 9, 1896, when he gave the following history: Four weeks before he caught cold, and had pain in the chest, headache, and cough, with a thick expectoration free from blood. After a week the cough and expectoration subsided, yet he did not gain strength, and, finally, on July 1st, was compelled to take to his bed. Since then he had been troubled with shortness of breath, a wheezing in the chest, and a feeling of great prostration, but had not had any cough or expectoration for nearly three weeks.

On examination I found a tall, flat-chested, exceedingly emaciated man; the skin was covered with a cold sweat; the tongue was bare and purplish in color; cyanosis was not present. There was no abdominal tenderness or distention; the liver and spleen were not enlarged. The breathing was rapid but not noisy. On palpation a soft, tremulous, to-and-fro friction was felt on the left side over the anterior and lateral parts of the chest; there was no tenderness on pressure, and no hindrance to deep breathing. The percussion resonance was good; indeed, the note was hyperresonant. On auscultation, a chorus of small moist and dry râles, neither distinctly sibilant nor truly sonorous, could be heard all over the chest. Inspiration was a little harsh; expiration was not prolonged or harsh, except at the right apex, where the breath sounds were somewhat accentuated. Over a great part of the chest the fremitus which had been felt on palpation was distinctly audible. It was exceedingly soft and gentle. The heart sounds were feeble; there was no murmur.

For two days the patient was rational, then a talkative delirium developed, with carphologia; he also had the almost constant habit of sucking air through his teeth. The temperature oscillated between 100° and 101° F.; the pulse was at first 104 and dicrotic; the respirations 42.

The urine had a specific gravity of 1.022, was clear, of a dark amber color, and contained considerable albumin; there was no sugar, no excess of indican, and the diazo-reaction was not obtained. Microscopic examination revealed only crystals of neutral calcium phosphate.

In endeavoring to arrive at a diagnosis two possibilities suggested themselves: typhoid fever and acute miliary tuberculosis. The absence of the rose-colored spots, of the splenic enlargement, and of the characteristic fæcal movements, together with the peculiar appearance of the tongue and the failure to obtain Ehrlich's reaction, sufficed to exclude enteric fever. A diagnosis of acute miliary tuberculosis of the lungs was then made, in part by exclusion, but chiefly on the strength of the physical signs, particularly the audible and palpable friction, which was interpreted, following Jürgensen, as dependent on the rubbing of subpleural tubercles of the lung against the costal pleura. An involvement of the pleura itself was considered improbable on account of the absence of pain and of embarrassment on deep breathing.

The patient sank rapidly. On the 11th the pulse was 212, the number of respirations 72. Death took place on July 12th, three days after he was first seen and twelve days after he had gone to bed.

At the autopsy, made on the evening of the day of death, both lungs were found thickly studded with tubercles, which were practically all in the early stage, being small and gray; the lungs were voluminous and were crepitant everywhere except at the bases, where hypostatic congestion had occurred. The pleural cavities were dry; some adhesions were present at the left apex and between the lobes of the left lung. Beneath the pleura a vast number of tubercles could be seen, and, by passing the hand over the surface, could be readily felt. The pleura itself nowhere showed any tubercles. At the right apex an old calcified tubercle with a cheesy nucleus was found; it measured an inch in length and two fifths of an inch in width. There were no tubercles on the pleura.

Abdomen: The transverse colon was sigmoid in shape; beginning at the hepatic flexure, it passed transversely across the abdomen to a point on the left nipple line, and then curving upward into the left hypochondrium touched the dome of the diaphragm. The intestines appeared normal. In the mesentery, at a point just behind the umbilicus, a large tuberculous lymphatic gland, two inches long and an inch wide, was found; on section it presented a typical cheesy interior. No other tuberculous glands were seen.

On account of external circumstances the autopsy from this point on had to be hastened. Rapid inspection of the liver and the other abdominal viscera did not reveal any tubercles.

The brain was not examined; in all probability it was not affected.

The mesenteric gland, a slice of the lung, and a small piece of liver were taken for study.* Microscopic examination showed caseous areas with giant cells at the periphery in the first and miliary tubercles in the second; tubercles were likewise found in the liver, which also showed marked congestion. Tubercle bacilli were readily demonstrated by staining in the lungs, but could not be discovered in the lymphatic gland.

It was Buhl's dictum that in every case of acute miliary tuberculosis a caseous nodule could be found somewhere in the body. The truth of this is exemplified by the present instance; but there were two foci, either of which might have been the source of the miliary tuberculosis—the mesenteric gland and the calcified tubercle at the apex of the right lung. I believe the former was the starting point of the disease—it was so much larger, and its situation with reference to the blood stream was so much more favorable for the dissemination of the bacilli, that such a view impressed itself upon the mind at once.

The involvement of the liver tends to corroborate this opinion, although the absence of tubercles in that organ would not of itself imply that the bacilli had not been conveyed along the portal circulation, for we know that abdominal tumors in the territory of that circulation can give metastasis to the lung without becoming localized in the liver.

The pulmonary tubercle, finally, was obsolescent, partly calcified, and encapsulated, and had the appearance of the tubercles that are so frequently discovered accidentally in making autopsies on subjects otherwise not tuberculous.

No evidence was found of any spread along the mesenteric lymphatic vessels to the thoracic duct. That the latter can be the pathway along which the bacilli may travel to reach the right side of the heart has been shown by Ponfick.

If the single mesenteric gland was, as I believe, the focus from which the disease emanated, the case must be considered rare, for the bronchial, cervical, and axillary glands are comparatively far oftener the source of an acute miliary tuberculosis than those of the mesentery.

From a clinical point of view the most interesting features of the case were the absence of cough and expectoration despite the diffuse bronchitis, the absence of cyanosis, and the presence of the peculiar fremitus perceptible on palpation and auscultation. Ruehle * says that cough is never absent, although it diminishes in the later stages from a lessened irritability of the medulla oblongata. In my case the patient did not cough during the last three weeks of his life (a period which probably covers the entire duration of the disease), although he was rational to within two days of his death. I know of no other explanation than the rather unsatisfactory one given by Ruehle—a deficient excitability of the medullary centres, dependent, we may assume, on the toxæmia generated by the infection.

The non-occurrence of cyanosis accords with the absence of subjective respiratory distress.

Of the friction fremitus I have already said that it gave the impression as if produced by the rubbing of a multitude of tubercles. It was audible as a distinct and separate sound from that produced by the bronchial râles, and was perceived by the touch as a gentle rub, much softer than any rhonchial fremitus I have ever felt. Jürgensen[*] who in 1872 first called attention to this phenomenon, described it as a fine rubbing perceivable by the touch and audible during inspiration and expiration; it was like a fine crepitation, and was unaccompanied by infiltration of the lung or by pain. He believed that it was due to a dotting of both pleuræ with tubercles, but at the autopsy miliary tubercles were found on the right side beneath the pulmonary pleura, which was free, and on the left side in the substance of adhesions which obliterated the cavity.

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* The specimens were shown at a meeting of the Philadelphia Pathological Society.

* Ruehle. Von Ziemssen's *Handbuch*, 1874, Bd. v, Abth. 2, p. 132.

Burkhart,[†] in 1873, reported two cases in which he observed Jürgensen's sign, but the sound was rough instead of soft, and, as the autopsy showed, depended on the rubbing of obsolescent, calcified tubercles. Heitler[‡] also heard it in a case of acute miliary tuberculosis, but was of the opinion that the sound was a fine crepitation (*Knisterrasseln*) and not a rubbing. Löbel, who saw the case, compared it to the sound that might be produced by sticking a piece of paper with innumerable pins.

Possibly, in Heitler's case, the sound was of the nature of crepitation, but in ours, as indicated above, it had an unmistakable rubbing character.

Jürgensen was inclined to consider the fremitus a pathognomonic sign of acute miliary tuberculosis of the lungs, and I feel that the case here recorded supports such a view. Not rarely it is extremely difficult to differentiate between acute miliary tuberculosis and typhoid fever; it seems from the observations of Warthin[#] that the blood count gives us no reliable clew—hypoleucocytosis obtains in both diseases. Furthermore, with reference to Widal's serum reaction, Breuer,[‖] in a recent article, reports a case of acute miliary tuberculosis in which the serum produced a slight agglutinating action on the typhoid bacilli. Elsner's method has also not proved itself very reliable, for certain French observers profess to have discovered by means of it typhoid bacilli in the stools of healthy persons and of those suffering from various non-typhoidal affections (including acute miliary tuberculosis).

If further studies should demonstrate the trustworthiness of the peculiar friction sound which, since it is produced by tubercles situated just beneath the pleura, might be termed *subpleural friction*, the diagnosis between the two affections could often be made in otherwise doubtful cases.

801 North Sixth Street.

The Richmond Academy of Medicine and Surgery.—At the last regular meeting, on Tuesday evening, the 13th inst., a discussion on Internal Hæmorrhoids was to be opened by Dr. William H. Parker.

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[*] Jürgensen. *Berlin. klin. Woch.*, 1872, No. 5, p. 53. See also Fagge's *Practice*, 1886, vol. i, p. 1017.

[†] Burkhart. *Deutsch. Arch. f. klin. Med.*, 1873, xii, p. 277.

[‡] Heitler. *Wien. med. Presse*, 1872, p. 272.

[#] Warthin. *Medical News*, January 25, 1896.

[‖] Breuer. *Berlin. klin. Woch.*, 1896, Nos. 47 and 48.

Therapeutical Notes.

A New Preparation of Creosote.—Dr. Kopp (*Lyon médical*, March 7, 1897) recommends the following preparation, which may be administered in wafers or cachets:

℞ Beech creosote, Benzoin, each	15 grains;
Powdered charcoal	90 “

Powder the benzoin and pass it through a No. 80 silk sieve, triturate it for a few minutes with the creosote, then add the charcoal gradually, keeping up the trituration. The product is a powder which does not stick to the mortar and does not spot either paper or unleavened bread. It is to be divided into ten cachets.

Europhene in the Treatment of Burns.—The *Presse médicale* for March 27th gives the following formula:

℞ Europhene	1 part;
Vaseline, Lanolin, each	10 parts.

M. For burns to the degree of rubefaction or vesication.

An Application for Rebellious Chilblains.—The *Journal de médecine de Paris* for March 28th gives the following formula, attributed to Chéron:

℞ Solution of lead subacetate, Tincture of iodine, Tincture of opium, each	5 parts;
Starch	10 “
Glycerin	140 “

M.

Arsenic in the Treatment of Asthma.—Dr. William Murray (*Rough Notes on Remedies*, London, 1897; *Medical Chronicle*, March, 1897) says the following prescription has achieved the happiest results in spasmodic asthma:

℞ Tincture of stramonium	2 drachms;
Ammonium carbonate	1 drachm;
Sodium bicarbonate	3 drachms;
Magnesium carbonate	1 drachm;
Powdered rhubarb	20 grains;
Chloroform	20 minims;
Peppermint water, enough to make	8 ounces.

M. S.: Half an ounce to be taken three times a day, with an ounce of water.

“Having thus secured a temporary lull in the complaint,” says the author, “the patient must be put on a course of arsenic, care being taken to give just as much as the stomach will bear. A good plan is to give Fowler's solution—five drops—with breakfast and dinner, and maintain the corrective dose with stramonium at night.”

The Prevention of Iodism in the Use of Potassium Iodide.—Spencer (*Journal de médecine de Paris*, March 28, 1897) is credited with the following formula:

℞ Potassium iodide	30 parts;
Ammonium ferrocitrate	4 “
Tincture of nux vomica	8 “
Distilled water	30 “
Tincture of cinchona, enough to make	120 “

M. S.: A teaspoonful, in half a glass of water, to be taken after each meal. The tincture of nux vomica and the ammoniocitrate of iron are said to check the tendency to coryza and at the same time to act as tonics.

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A NOTABLE CONSOLIDATION OF SCHOOLS.

THE union of the Bellevue Hospital Medical College with the Medical Department of the New York University, recently announced, is a noteworthy token of the tendency that has happily set in to maintain a few schools of unquestionable excellence rather than a great number of teaching institutions having inadequate facilities. The rapidity with which one State after another has adopted laws requiring a high degree of education on the part of candidates for the license to practise insures the extension of this tendency throughout the country. It is only a question of time, and of a comparatively short time, it seems to us, when the New York State standard or a close approach to it will be in force all over the United States. When that state of things has been established, the numerous poorly equipped colleges will be found incapable of turning out graduates that can pass the State examinations; consequently they will cease to be patronized and have to go to the wall. It will not be the fault of their faculties necessarily. It takes a great deal of money to provide the means of teaching medicine as it is taught nowadays in the large schools, and the institutions with inadequate resources are fatally handicapped, no matter what intellectual ability the teachers may have. The small schools served their purpose in the formative stage of the nation, but they have now almost outlived their usefulness. It is not difficult to foresee that within a very few years they will all have disappeared, and the profession will be the better off for it.

The Bellevue Hospital Medical College has had an honorable and useful career under its own name, and that name is not to be wholly suppressed in the title of the university department as it is reorganized; so the old graduate of the school may still say to himself as he examines his diploma that it does not bear the name of a defunct institution. As an integral part of the new school, the Bellevue Hospital Medical College, we feel certain, will continue to make itself felt as a power in the profession.

CHANGES SUGGESTED FOR THE NEW PHARMACOPŒIA.

THE committee of revision and publication of the *Pharmacopœia of the United States* has just issued part i of a *Digest of Criticisms on the United States Pharmacopœia*, comprising abstracts of articles published up to July 1, 1896, so far as they are pertinent to the subject and susceptible of being abstracted intelligibly. Many of the suggestions embodied in the *Digest* seem to us very important, and all of them appear worthy of careful consideration. They relate to various features of the *Pharmacopœia*, many of them to nomenclature and the official titles of drugs and preparations, which are by no means insignificant matters. Biltz (*American Journal of Pharmacy*) is cited as pleading for "scientific accuracy tempered with common sense"—a happy expression—in pharmacopœial nomenclature. The names, he well says, should be as short as possible, not changing with every new theory, comprehensible, and well known and familiar by reason of usage.

The American Pharmaceutical Association's committee says that the termination -ol should be limited to phenols and alcohols, and should not be used for aromatic hydrocarbons; for instance, benzol and toluol should be benzene and toluene. The committee states also that the terms hydrochlorate and hydrobromate should be changed to hydrochloride and hydrobromide. Beringer (*American Journal of Pharmacy*) wishes for more definite expressions of chemical constitution; for example, he contends that sodic chloride is more accurate than sodium chloride. It seems that some critics aver that, for practical reasons, the official name of a plant should indicate the part of the plant that is used, even if only one part is official.

Curtman is cited as holding that the official potassii bichromas is really a secondary salt of a presumable dichromic acid, and therefore should be named potassium dichromate. Bastin (*American Journal of Pharmacy*) calls attention to the absurdity of calling the bark of *Prunus serotina* prunus virginiana. As regards the official designation of brandy, spiritus vini gallici, Rice thinks it a question if the specification gallicus is "in accordance with the actuality." He adds that one of the objections to recognizing California brandy is the peculiar flavor, "which is apt to cause nausea." On this point we would remark that there is to be had in the market California brandy of very grateful flavor, wholly free from a tendency to provoke nausea. The same critic states that, as the formula for syrupus ferri, quininæ et strychninæ phosphatum does not direct the phosphates of the alkaloids to be used, the title ought to be syrupus ferri phosphatis, quininæ et strychninæ; but this does not seem to cover the case completely, for it is not quinine that is ordered, but quinine sulphate. In place of tincturæ herbarum recentium, the title tinctura herbæ recentis has been suggested. It is remarked also that the name tinctura tolutana implies that the preparation is merely impregnated with Tolu, whereas it is a complete solution of the balsam, and should be called tinctura Tolu. While we are on this subject of titles, we may perhaps be allowed to make two criticisms of our own, one general and the other specific. The first is that it does not seem reasonable to treat the names of drugs as if they were those of deities, writing them with initial capitals. The other is that the correct pharmacopœial name for oil of bitter almonds is given in this *Digest* as oleum amygdalæ amarum, but that is undoubtedly a slip of the pen.

Some additions to the list of official preparations are asked for, such as more troches, more elixirs, a tincture of staphisagria, and a liniment of chrysarobin. James (*Pharmaceutische Centralhalle für Deutschland*), it is said, obviates the inconvenience arising from soiling the clothes with chrysarobin ointment by substituting for it a liniment made by dissolving chrysarobin in chloroform and adding linseed oil. This liniment, it is added, may be applied with a brush.

A few criticisms are recorded concerning the official requirements in the properties of drugs and the tests to which they must respond. Among these, it is pointed out by Dieterich (*Pharmaceutische Post*) that lanolin is apt to become rancid in the course of time. Concerning the two varieties of vaseline, petrolatum molle and petrolatum spissum, the committee has received letters from prominent wholesale houses to the effect that there is no need of two kinds, and not one pharmacist in fifty has them both. The vaseline of commerce, it is added, melts at a temperature of from 113° to 118.4° F., and one of a lower melting point the pharmacist can not use, while there is absolutely no demand for one of a higher melting point.

Hirsch (*Pharmaceutische Rundschau*) objects to potassa's being described as brittle, because "it requires some effort to break the sticks." So it does to break glass, yet glass is proverbially the type of brittleness. Has not the critic confounded brittle and fragile? Under sodii salicylas mention is made of an article by Conrady concerning the solvent power of sodium salicylate "on creosote, phenol, volatile oils, fluid extract of cascara, etc.," but perhaps this is erroneously stated. Popiel (*Pharmaceutische Centralhalle für Deutschland*) is cited as having found, contrary to the general opinion, that tincture of iodine decomposes more rapidly in the dark than when exposed to light.

An occasional caution is given as to danger or inconvenience from the use of certain preparations or from testing them by the sense of taste. For example, belladonna plaster is said to be of excessive strength and capable of giving rise to unpleasant symptoms, it is remarked that hydrargyri iodidum flavum should not be prescribed in conjunction with a soluble iodide, and in regard to potassium cyanide this pertinent remark is made: "Since this salt is so very poisonous, the *taste* might as well be left out."

The activity of cantharidal cerate is said to be greatly increased by the addition of an acid to the flies. For two hundred and fifty parts of cantharides, Dieterich adds to the melted mass one part of sulphuric acid and ten parts of ninety-per-cent. alcohol, keeps the mass for two hours at 158° F., and finally adds two parts of barium carbonate rubbed up with six parts of alcohol.

As regards cod-liver oil, Sherrard (*American Journal of Pharmacy*) is credited with saying that there is no reason why the oil from the American cods should not be used in place of the Norwegian oil. We agree with Sherrard entirely; we understand it is not very uncommon for Norwegian fish-hooks to be found in cod caught in American waters. The question is very properly asked, Is there any reason for retaining the hundred-leaved rose, seeing that that variety is not directed in any preparation?

Finally, Dr. Rice, the able and indefatigable chairman of the committee, writes as follows concerning caffeina citrata: "The committee has information that there still exists much confusion and ignorance regarding the nature of the so-called 'citrate of caffeine' formerly on the market, on the one hand, and the alkaloid caffeine and the pharmacopœial 'citrated caffeine,' on the other hand. Old-fashioned pharmacists who have known and dispensed *caffeine* under the old misnomer of *citrate of caffeine* persist in ordering the article under the latter name, and in a majority of cases it is almost certain that the former is wanted. Again, physicians frequently prescribe 'caffein. cit.' in combination with sodium bicarbonate and other substances with which the official citrated caffeine is incompatible, not knowing that a different substance is dispensed now when 'caffein. citr.' is ordered. And, moreover, many of them do not know that 'citrated caffeine' contains only fifty per cent. of the alkaloid. All this confusion is regrettable, but the *Pharmacopœia* can certainly not cater to ignorance and lack of progressiveness."

MINOR PARAGRAPHS.

A PROPOSED BRITISH NATIONAL MEMORIAL OF JENNER.

On March 31st, as we learn from the *Lancet*, a meeting was held in the theatre of the University of London, with the object of establishing a national memorial of Edward Jenner. The Duke of Westminster, who presided, said it had been suggested that the statue of Jenner, now in Kensington Gardens, might be removed and placed opposite St. George's Hospital, but he ventured to think that Jenner's native village of Berkeley might perhaps more fittingly receive it. Lord Herschell introduced this resolution: "That the present is an appropriate time to inaugurate a work of national utility in honor of Edward Jenner." The second resolution was moved by Lord Lister, as follows: "That a subscription be set on foot with a view of promoting, in connection with the British Institute of Preventive Medicine, but in a manner distinguished by Jenner's name, researches on the lines which he initiated." Earnest speeches were made in favor of the resolutions, and they were both carried unanimously.

A NEW GERMAN PERIODICAL.

We have received from the house of Leopold Voss, of Hamburg, the first number of *Mittheilungen aus den Hamburgischen Staatskrankenanstalten,* edited by Professor Rumpf, who has furnished an introductory article which is followed by an obituary of Carl Eisenlohr. The communicated articles are as follows: The Results of the Treatment of Diphtheria with Behring's Curative Serum in the New General Hospital, by Dr. Rumpf and Dr. Bieling; Carcinoma in the First Two Decades of Life, by Dr. de la Camp; A Fatal Case of Myoma of the Stomach, by Dr. Kemke; Multiple Cicatricial Strictures of the Small Intestine, by Dr. E. Fränkel; A Contribution to the Clinical Symptomatology of Thrombosis of the Cranial Sinuses, by Dr. Nonne; Cases of the Remote Effects of Foreign Bodies that have been Swallowed, by Dr. Graff; and On Nephrydrosis Caused by Stricture of the Ureter or of the Renal Pelvis, by Dr. Sudeck. The new publication, which is to appear "in zwanglosen Heften," is well printed and of attractive appearance.

AN ODIOUS BILL BEFORE THE FRENCH CHAMBER OF DEPUTIES.

In the March 28th number of a new French journal, *L'Echo médical du nord,* published in Lille, M. Vallas, dean of the Lille Faculty of Law, gives the text of a bill for preventing and suppressing abuses committed in the practice of medicine, and proceeds to show that the bill, which, we may say, is incidentally insulting to the medical profession, is an outcome of the mania for regulating things, a mania, unfortunately, that is not confined to France.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 13, 1897:

DISEASES.	Week ending April 6.		Week ending April 13.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	3	2	6	0
Scarlet fever	178	10	238	9
Cerebro-spinal meningitis	2	2	0	0
Measles	195	6	193	6
Diphtheria	218	44	233	26
Croup	7	8	12	6
Tuberculosis	212	123	231	98

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital-Service:

Small-pox—Foreign.

Valparaiso, Chile	Jan. 1–31		1 death.
Barcelona, Spain	Feb. 1–28		21 deaths.
Alexandria, Egypt	Feb. 18–25		2 “
Cairo, Egypt	Feb. 18–25		3 “
Cardenas, Cuba	March 13–20	145 cases,	34 “
Erzerum	Feb. 28–March 6	5 “	1 death.
Genoa, Italy	March 13–20	2 “	
Gibraltar	March 7–14	1 case.	
Madrid, Spain	March 10–17		4 deaths.
Matanzas, Cuba	March 10–17		6 “
Moscow, Russia	March 6–13	1 case,	1 death.
Odessa, Russia	March 6–13	15 cases,	4 deaths.
Rio de Janeiro, Brazil	Feb. 20–27	1 case.	
St. Petersburg, Russia	March 7–13	6 cases,	1 death.
Warsaw, Russia	March 6–13		3 deaths.
Yokohama, Japan	Feb. 1–March 4	208 “	42 “
Constantinople, Turkey	March 1–8		4 “

Yellow Fever.

Rio de Janeiro, Brazil	Feb. 20–27	18 cases,	9 deaths.
Sagua la Grande, Cuba	March 13–20	15 “	5 “
Santiago, Cuba	March 13–20		1 death.

The following statistics have since been received in the same office:

Small-pox—United States.

Chicago	March 27–April 3		1 death.
Pensacola	March 27–April 3	3 cases of varioloid.	
Drifton, Pa.	April 6	1 case.	

Small-pox—Foreign.

Bombay, India	March 2–9		3 deaths.
Cairo, Egypt	March 5–11		5 “
Calcutta, India	Feb. 20–27		6 “
Cienfuegos, Cuba	March 21–28		1 death.
Corunna, Spain	March 6–27		3 deaths.
Gothenberg, Sweden	March 13–20	1 case.	
Madras, India	Feb. 27–March 5		4 “
Madrid, Spain	March 17–24		2 “
Moscow, Russia	March 13–20	2 cases.	
Odessa, Russia	March 13–20	8 “	3 “
Paris, France	March 13–20		2 “
St. Petersburg, Russia	March 13–20	6 “	2 “
Trieste, Austria	March 6–20	12 “	3 “
Warsaw, Russia	March 13–20		3 “

Cholera.

Calcutta, India	Feb. 20–27		101 deaths.
Madras, India	Feb. 27–March 5		2 “

Yellow Fever.

Para, Brazil	March 13–20		3 deaths.
Sagua la Grande, Cuba	March 20–27	17 cases,	6 “

Plague.

Bombay, India	March 2–9		590 deaths.

Special Exercises at the Jubilee Meeting of the American Medical Association.—The committee of arrangements has set aside an hour on the second day of the meeting for exercises to commemorate the founding of the association, in Philadelphia, in 1847. The founders of the association believed that it would raise the standard of medical education and combine the medical profession of the United States in one body. Dr. Davis, who is recognized by all as the moving spirit in the enterprise, will read a short paper, giving an account of the origin of the association and how the objects for which it was founded have been attained. The committee has taken steps to secure the attendance at the meeting of the presidents of the State medical societies and the presidents of the State boards of medical examiners as an illustration of the success attained through the instrumentality of the association.

In addition to the address of Dr. Davis, there will be two or three other short addresses to add to the interest of the occasion. It is desired that the presidents of all State boards of examiners and of all State medical societies meet Dr. Davis a few minutes before his address in order that they may escort him to the stage. In the event of the president of any one of these organizations not being able to attend the meeting, he is requested to send as an alternate one of the ex-presidents, in order that every State society and every examining board may be represented upon this notable occasion.

Of the original members of the association, there are still living Dr. N. S. Davis, of Chicago, Dr. Alfred Stillé, of Philadelphia, Dr. John B. Johnson, of St. Louis, and Dr. David F. Atwater, of Springfield, Massachusetts. The committee hopes that these gentlemen will all be present to take part in the meeting.

[Signed.] JOHN B. ROBERTS, *Chairman of the Committee on Anniversary Exercises.*

The New York Academy of Medicine.—At the last regular meeting, on Thursday, April 15th, the order for the evening was as follows: Gallstones; their Effects and Diagnosis, by Dr. George L. Peabody; The Chemistry of Gallstones, by Professor R. H. Chittenden; The Therapy of Gallstones, by Dr. W. G. Thompson; the Surgery of the Gall Bladder, by Dr. A. G. Gerster; and The Surgery of the Common Bile Duct, by Dr. F. Lange. The subject was to be discussed by Dr. William H. Draper, Dr. Joseph D. Bryant, Dr. Robert Abbe, Dr. Charles L. McBurney, and others.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 19th inst., a discussion on The Management of Prolapse of the Iris after Penetrating Wounds will be opened by Dr. G. E. de Schweinitz, of Philadelphia, and continued by Dr. Charles J. Kipp, of Newark; Dr. H. D. Noyes, Dr. H. Knapp, Dr. Charles S. Bull, Dr. David Webster, Dr. T. R. Pooley, Dr. P. A. Callan, Dr. J. E. Weeks, and others. Dr. J. H. Claiborne will read a paper entitled A Probable Case of Thrombosis of the Lower Central Retinal Vein, and a Review of the Literature on the Subject. Patients will be presented and specimens exhibited.

At the next meeting of the Section in General Medicine, on Tuesday evening, the 20th inst., Dr. Egbert Le Fevre will read a paper on The Nomenclature and Mode of Production of Auscultatory Signs in Pulmonary Diseases, which is to be discussed by Dr. A. A. Smith, Dr. R. C. M. Page, Dr. W. H. Katzenbach, Dr. F. W. Jackson, Dr. S. S. Burt, and others.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 22d inst., Dr. Herman L. Collyer will read a paper on The Use of the Curette in Puerperal and Chronic Endometritis. Cases will be reported, and specimens and instruments exhibited.

At the next meeting of the Section in Laryngology, on Wednesday evening, the 28th inst., Dr. J. W. Gleitsmann will read a paper entitled The Influence of Adenoid Vegetations on the Growth of the Upper Maxilla and Nasal Sæptum, which is to be discussed by Dr. J. Solis-Cohen, of Philadelphia; Dr. D. B. Delavan, Dr. C. H. Knight, Dr. J. Wright, Dr. D. H. Goodwillie, and others. Cases will be presented, and specimens and new instruments exhibited.

The Practice of Medicine in Idaho.—A law has been enacted establishing a board of medical examiners consisting of six members, three being appointed from the regular profession, two from the eclectic, and one from the homœopathic. The penalty for practising without a license is a fine of from fifty to three hundred dollars, or imprisonment from ten days to six months, or both fine and imprisonment. Each day's practice is to be considered a separate offense. Itinerant venders of nostrums, etc., are required to pay fifty dollars for a license. Surgeons of the army, navy, and marine-hospital service who visit the State as consultants with legally qualified practitioners are exempted from the provisions of the law.

The Buffalo Academy of Medicine.—At the last meeting of the Section in General Medicine, on Tuesday evening, April 13th, the subject of The Physiology and Pathology of Cycling was under discussion (the nervous system, by Dr. Matzinger; the heart and lungs, by Dr. Pryor; the digestive system, by Dr. Stockton; and the pelvic viscera, by Dr. Mann).

The Jersey City Hospital.—An examination to fill a vacancy on the resident staff will be held at the hospital, on the corner of Baldwin Avenue and Montgomery Street, on May 17th, at 12.30 P. M. The term of service is eighteen months, beginning on June 1st. Applicants must be graduates in medicine.

The Pathological Society of Philadelphia.—At the annual conversational meeting, on Thursday, April 22d, Dr. Ludvig Hektoen, of Rush Medical College, Chicago, will deliver an address entitled Segmentation and Fragmentation of the Myocardium.

Changes of Address.—Dr. F. A. Bottome, to No. 218 Lenox Avenue. New York; Dr. William J. Robinson, to No. 119 East One-hundred-and-twenty-eighth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 4 to April 10, 1897:*

HARRIS, HENRY S. T., Captain and Assistant Surgeon. The leave of absence granted him for seven days is extended twenty-three days.

JARVIS, NATHAN S., Captain and Assistant Surgeon, is relieved from duty at Willet's Point, N. Y., to take effect on the expiration of his present leave of absence, and ordered to Fort Huachuca, Arizona, instead of Fort Clark, Texas, for duty.

MORRIS, EDWARD R., Captain and Assistant Surgeon, is granted leave of absence for six months, to take effect on or about May 18, 1897.

SWIFT, EUGENE L., Captain and Assistant Surgeon, is relieved from duty at Fort Yates, North Dakota, to take effect upon the expiration of his present sick leave, and ordered to Fort Slocum, New York, for duty.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Sixteen Days ending March 31, 1897:*

CARTER, H. R., Surgeon. Granted leave of absence for one day. March 27, 1897.

WHEELER, W. A., Surgeon. Granted leave of absence for seven days from March 23, 1897.

BANKS, C. E., Surgeon. Detailed as inspector of Marine Hospitals and Marine-Hospital stations, March 9, 1897. Detailed to inspect stations of Cincinnati, Ohio, Chicago, Ill., and Detroit, Mich., March 18, 1897.

BROOKS, S. D., Passed Assistant Surgeon. To proceed from Port Townsend, Wash., to principal ports of Japan and China on special duty. March 30, 1897.

GEDDINGS, H. D., Passed Assistant Surgeon. To proceed from Marseilles to Paris, France, on special duty. March 22, 1897.

STIMPSON, W. G., Passed Assistant Surgeon. To assume charge of Marine Hospital, Port Townsend, Wash., in addition to quarantine station, during absence of Passed Assistant Surgeon S. D. BROOKS. March 31, 1897.

NYDEGGER, J. A., Passed Assistant Surgeon. Granted seven days' leave of absence from April 2, 1897. Relieved from duty in Hygienic Laboratory, April 2d, and upon expiration of leave of absence to rejoin his station at South Atlantic Quarantine. March 29, 1897.

GARDNER, C. H., Passed Assistant Surgeon. When relieved from duty at Chicago, Ill., on or about April 2, 1897, to proceed to Baltimore, Md., for duty. March 27, 1897.

SPRAGUE, E. K., Assistant Surgeon. To proceed from Boston, Mass., to Washington, D. C., for temporary duty in Hygienic Laboratory. March 27, 1897.

PROCHAZKA, EMIL, Assistant Surgeon. To proceed from Reedy Island Quarantine to Delaware Breakwater Quarantine Station for temporary duty. March 29, 1897.

WICKES, H. W., Assistant Surgeon. To proceed from New Orleans, La., on or about April 3, 1897, to Boston, Mass., for duty. March 27, 1897.

GREENE, J. B., Assistant Surgeon. When relieved from duty at Baltimore, Md., on or about April 3, 1897, to proceed to Detroit, Mich., for duty. March 31, 1897.

CLARK, TALIAFERRO, Assistant Surgeon. To proceed to Chicago, Ill., for duty. March 27, 1897.

HASTINGS, HILL, Assistant Surgeon. To proceed to New Orleans, La., for duty. March 27, 1897.

LAVINDER, C. H., Assistant Surgeon. To proceed to New York, N. Y., for duty. March 27, 1897.

Appointments.

TALIAFERRO CLARK, of District of Columbia; HILL HASTINGS, of Kentucky; and CLAUDE H. LAVINDER, of Virginia, commissioned as assistant surgeons, March 25, 1897.

Society Meetings for the Coming Week:

MONDAY, *April 19th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York Medical Association; Boston Society for Medical Improvement; Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *April 20th:* Medical Society of the State of California (first day—San Francisco); Medical Association of the State of Alabama (first day—Selma); New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); New York Odontological Society; Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; College of Physicians of Philadelphia (Section in Ophthalmology); Passaic, N. J., County Medical Society (annual); Baltimore Academy of Medicine.

WEDNESDAY, *April 21st:* Florida Medical Association (Palatka); Mississippi State Medical Association (first day—Jackson); Medical Association of Georgia (first day—Macon); Medical Society of the State of California (second day); Medical Association of the State of Alabama (second day); Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Windham, Connecticut, County Medical Society (annual—Plainfield); Middlesex, Massachusetts, South District Medical Society (annual—Waltham); Philadelphia County Medical Society.

THURSDAY, *April 22d:* Mississippi State Medical Association (second day); Medical Association of Georgia (second day); Medical Society of the State of California (third day); Medical Association of the State of Alabama (third day); New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Massachusetts, Society for Medical Improvement (private); Hartford, Connecticut, County Medical Association (annual); Pathological Society of Philadelphia (conversational).

FRIDAY, *April 23d:* Mississippi State Medical Association (third day); Medical Association of Georgia (third day); Medical Association of the State of Alabama (fourth day); New York Clinical Society (private—annual); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society; Northern Medical Association of Philadelphia.

SATURDAY, *April 24th:* New York Medical and Surgical Society (private); Worcester, Massachusetts, North District Medical Society (annual—Fitchburg).

Answers to Correspondents:

No. 458.—Section 3917 of the former laws of Vermont, in the chapter of medical laws, reads: "This chapter shall not apply to the practice . . . of midwifery by women in the town or locality in which they reside. . . ." Section 9 of the new law creating a board of medical examiners, proposed in 1896, reads: "This act shall not apply to persons . . . exempt under the provisions of former acts. . . ." As midwives are not specifically named in the new law, it is to be supposed that they will not be required to pass an examination.

Births, Marriages, and Deaths.

Married.

VAN RIPER—POPPLE.—In Passaic, New Jersey, on Thursday, April 8th, Dr. Arthur Ward Van Riper and Miss Eva Emilie Popple.

WOODRUFF—WARRINER.—In Albany, N. Y., on Wednesday, April 7th, Dr. W. L. Woodruff, of Mobile, Alabama, and Miss Bertha M. Warriner.

Died.

DAWES.—In Saugerties, N. Y., on Sunday, April 11th, Dr. Thomas Spencer Dawes, in the seventy-fifth year of his age.

Letters to the Editor.

THE INCOMPATIBILITY OF CALOMEL AND POTASSIUM BROMIDE.

119 EAST 128TH STREET, NEW YORK, *April 7, 1897.*

To the Editor of the New York Medical Journal:

SIR: In my article on The Incompatibility of Antipyrine and Calomel, which appeared in the *Journal* for February 13th, I stated among other things that potassium bromide formed with calomel a highly poisonous compound.

To judge from the many letters I have received from different parts of the United States, asking for further information, for an explanation of the chemical reaction and equation, the statement appeared entirely new and rather startling to many members of our profession. In many minds there seems to be the impression that when a mercurial salt is combined with another salt, there is only a liability of the acid radicle being changed, but not of the base—*i. e.*, mercurous chloride, for instance, may become converted into mercur*ous* bromide, but not into mercur*ic* bromide. This is of course wrong. Any mercur*ous* salt may, by some of the mercury being precipitated in the metallic state, become converted into a mercur*ic* salt. This is exactly what takes place when calomel and potassium bromide are triturated together; mercury is separated, and mercuric bromide—a highly poisonous compound—is formed.

The reaction is plainly expressed by the following equation:

$$\underset{\text{Calomel.}}{Hg_2Cl_2} + \underset{\text{Potassium bromide.}}{4\ KBr} = \underset{\text{Mercury.}}{Hg} + \underset{\text{Mercuric bromide.}}{HgBr_2} + \underset{\text{Potassium bromide.}}{2\ KBr} + \underset{\text{Potassium chloride.}}{2\ KCl.}$$

The presence of water or moisture seems to be necessary for the reaction to take place, because if the potassium bromide is dried, so that all interstitial moisture is driven off, no change occurs in the mixture; but the reaction occurs immediately on the addition of water.

The bromide and calomel should therefore never be prescribed together, whether in powder form or in a mixture; and when they are administered separately, the interval should not be too short, say one or two hours.

WILLIAM J. ROBINSON, M. D.

MIDWIVES AND OPHTHALMIA NEONATORUM.

350 WEST FORTY-SIXTH STREET, *April 6, 1897.*

To the Editor of the New York Medical Journal:

SIR: Referring to the account of the meeting of the Society of the Alumni of Charity Hospital, in the *Journal* of April 3d, I see that Dr. Adams, in the discussion following his paper on Ophthalmia Neonatorum, calls attention to the law governing midwives in cases of “sore eyes,” and suggests that the board of health be notified of infractions of that law.

Municipal bodies are sometimes slow; private institutions are often thorough.

A case of ophthalmia neonatorum came into the service of Dr. Johnston MacLeod in the Northern Dispensary during last December showing evidence of neglect. The case was reported by Dr. MacLeod to the Society for the Prevention of Cruelty to Children and taken up by them. The midwife who had attended the mother was arrested and in the Court of Special Sessions fined ten dollars. The presiding justice, in passing sentence, said that as this was the first case of the kind which had come before them, and taking into consideration the fact that the child had suffered no permanent injury, the court would be lenient; but should a second charge of the same character be proved against this midwife, or a similar one against any other, the full penalty of the law would be enforced.

R. W. Glassford, M. D.

THE DIAGNOSIS OF JAUNDICE BY CENTRIFUGALIZED BLOOD PLASMA.

Fort Wayne, Indiana, *April 1, 1897.*

To the Editor of the New York Medical Journal:

Sir: A recent observation has led me to believe that cholæmia may be diagnosticated by the blood plasma separated in the centrifugal tube, before the appearance of the icteric hue of the skin. The case was one of well-marked jaundice, seen but once in consultation in a neighboring town, in which the centrifugal examination of the blood was made with a hand centrifuge taken to the patient's house. It was made principally for the purpose of getting a rough estimate of the proportion of blood cells, but I was at once struck by the very brilliant lemon hue of the plasma. This was so much more marked than that of the skin or conjunctiva that it seemed probable that it might be of service before the appearance of the latter.

The same observation may have been made before, but I simply record it without taking the trouble of looking up the literature of the subject.

G. W. McCaskey, M. D.

COMPULSORY RETURNS OF CASES OF TUBERCULOSIS.

To the Editor of the New York Medical Journal:

Sir: In view of the discussion now taking place respecting the action of the board of health in relation to consumption, I inclose the following suggestive measure from the recent book on *Consumption and its Prevention*, by Dr. Edward Playter, of Ottawa, Ont., which you so favorably noticed a few months ago, and which seems to largely meet the difficulties mentioned, being moderate, educational, and non-compulsory, and hence it would probably be a proceeding attended with much success:

“Instead of compulsory notification, registration, and even isolation, which has been proposed as a measure for the suppression of consumption, and which would doubtless create opposition and concealment of cases, it would be probably wiser for health authorities to adopt the simpler, less extreme plan of leaving the question of notification largely or wholly in the hands of the medical attendant in individual cases. The authorities might request all physicians to give notice of such cases coming under their observation as in their judgment required oversight and assistance in carrying out measures for preventing the spread of the disease; to cases in which neither patients nor friends, from want of means, were able of themselves to carry out such measures. This would limit notification to those to whom the aid of public officials would be not only acceptable, but desired. The public assistance given would more than compensate for the semipublicity. This appears to be about as much as the public are prepared to fully sanction; indeed, about all that is required in this line of action. Supplies of printed instructions should be given by the health authorities to all physicians for putting in the hands of consumptive patients of all classes or of the family or friends.”

Non-compulsory Practitioner.

Proceedings of Societies.

GERMAN MEDICAL SOCIETY OF THE CITY OF NEW YORK.

Meeting of February 1, 1897.

The President, Dr. W. Freudenthal, in the Chair.

Faulty Hydrotherapy.—Dr. Simon Baruch read a paper with this title in which he said that despite its antiquity, the use of water had not yet obtained a firm footing in therapeutics; despite its marked clinical results it still required to be brought to the attention of practitioners, and despite its espousal by the best authorities in ancient and modern medical practice and literature, the average medical man was not familiar with its history, action, and merits.

Dr. Baruch regarded as the chief reason for this state of affairs the absence of instruction in hydrotherapeutics in the curriculum of medical schools, to which were due the ignorance of the rationale of the action of water and the unfamiliarity with its correct application which were found among the majority of medical men. The indifference to definite methods had rendered its application in the hands of many unsuccessful and discouraging. Failure was the sure result of inattention to details. As the physician must judge the value of a remedy by his experience, it followed that failure to achieve the results which the experience of others had led him to expect had brought this remedy into disrepute, the fact unhappily remaining unrecognized that not the remedy, but its improper application, was at fault.

Although water was a simple remedy and appeared to be so easily applied, Dr. Baruch believed that no remedy in the entire materia medica demanded like judgment and care in its application. As an illustration, an incident was referred to showing how a brilliant young hospital physician shrank from the Brand bath in typhoid fever, because he had seen a patient die under cold-water treatment, which consisted in wrapping her in a sheet and sprinkling her with ice water. He insisted that the object of the Brand bath was to sustain the nerve centres first, and to reduce the temperature afterward. Although the latter was regarded as an index of gravity in most cases, the bath was not intended to combat it. A bath of 65° F., with friction for twenty minutes every three hours, whenever the temperature reached 102.5°, was calculated to arouse the nerve centres from their lethargy and give an impetus to all the dormant functions depending upon them. The low temperature of the bath irritated the peripheral sensory filaments, from which the irritation was conveyed to the central nervous system, to be reflected upon the heart, the lungs, and the secreting organs. Friction added to the irritation by multiplying it, the cold water being kept in motion; cold affusion over the head and shoulders was added to promote the same object. To whip up the nervous system (as was done in poisoning by narcotics) was the object of the Brand bath. But day by day, with occasional disappointments, a fifth, or a quarter, or a half degree of temperature was gained; the heart maintained its vigor, the kidneys increased their work, the stomach received more kindly the proffered nourishment, and sleep was induced. By this method the enemy could not be routed, the disease could not be shortened, but it could be held in check surely and completely until re-enforcements failed. The bacterial life period reached its end, the toxines ceased to be evolved, and at last the physician conquered this deadly enemy. This was the true aim, the correct rationale of the Brand bath. If temperature reduction was the chief need, we should have the key to the situation in the coal-tar antipyretics; if pulse reduction was the desideratum, veratrum viride would prove an open sesame; if nourishment was the chief object, there would be no lack of this in modern culinary and chemical art. But all these were as naught in the face of a toxæmia which overwhelmed the nerve centres of the most robust as well as the feeblest patients. To wrap the patient in a sheet and then sprinkle him with ice water, as had been done in the case cited, was a deviation from the correct technics of the typhoid-fever bath. Such a procedure did not fulfill the main object of arousing the nervous system. After the first shock had passed, no opportunity was given for reaction, because the sprinkling with ice water was continued, the cutaneous vessels and the elastic tissue of the true skin contracted, as evidenced by cutis anserina; the extreme cold imparted by the wet sheet, without remission, benumbed the sensory nerves and thus impeded the transmission of the shock and subsequent stimulus, even if the latter had ensued in an exceptionally strong individual.

Wrapping the patient in a sheet and sprinkling him with ice water did not fulfill these conditions, because of the absence of friction in this faulty method (which in the Brand bath stimulated to reaction, and, by widening the blood area of the skin, cooled a large quantity of blood), it frustrated completely the true aim of the cold bath. The surface temperature was indeed reduced by this improper method, but the blood was driven to the interior, congestions were favored, the organs were overloaded, and the patient emerged from such a bath (save the mark!) a shivering, cyanosed weakling. The ideal results obtained by Brand and others in twelve hundred cases, without mortality, could only be realized by following the exact method of Brand.

Dr. Baruch maintained that many had failed to obtain ideal results because they had deviated from this ideal method, each one modifying it to suit his own fancy. He insisted that to the free deviation from the correct procedure might be ascribed the lack of appreciation of the therapeutic value of the Brand method. Those physicians who had mastered the latter would agree with Professor Delafield, who taught that immersion in cold water was the only real treatment of typhoid fever, and the only way to practise this treatment was the exact method of Brand.

In the treatment of all diseases our teachers insisted upon correct doses of medicinal agents, the exact time and mode of their administration and frequency of repetition, and even their exact preparation. Dr. Baruch pleaded for similar care and attention in the prescription of water as a remedy.

In chronic diseases a correct application of water was quite as important as in acute diseases. A prescription for a bath or other hydriatic procedure without an exact statement of temperature, duration, pressure, and method, was as absurd as a prescription for a medicine without stating the dose and the method of administering it. The importance of pressure, temperature, and duration of every hydriatic procedure should be emphasized. Every physician realized the difference of effect arising from different temperatures, and yet we commonly read directions for cold, hot, or tepid baths.

Dr. Baruch illustrated the correct method and contrasted it with the faulty treatment of phthisis. He held that by gradually accustoming patients to lower temperatures and stronger pressure, he had obtained very favorable results in private and hospital practice. If low temperatures were used at once the patient was shocked and depressed.

The same might be said in neurasthenia and other chronic cases, in which he agreed with Dr. Draper, who maintained that the results of hydrotherapy were striking, and more effective than those of medicine.

He also referred to other faulty methods practised by eminent teachers who seemed to be quite inexact in prescribing water, but extremely precise in prescribing phosphorus and strychnine. He especially inveighed against the gradually cooled bath, which was intended to avoid shock and to be pleasant to the patient. Such a bath did not fulfill its object properly, because the surface vessels were relaxed by the warm water; reactive capacity was diminished by its calming and sedative effect. The vaso-constrictors were depressed. The subsequent cooling of the water found the sensory nerves unprepared, and chilliness usually resulted unless the patient was more robust than the average neurasthenic was. It was, unhappily, a very prevalent error to regard the most agreeable bath as the most salutary. We did not so reason in the application of medicinal agents, of electricity, or of diet. The application of water might be made agreeable by gradually accustoming the patient to lower temperatures, slowly reducing them every day or two, making the application brief at first, and increasing the duration and pressure day by day. The prime essential, however, should always be borne in mind that reaction was our aim; that this could not be evoked without some shock; that the more intense the latter the more effective the reaction, but the briefer it was the less unpleasant. If the physician bore in mind that his object in treating such a case was an increase of the quantity of blood circulating in the cutaneous vessels, an enhancement of the nutrition, a stimulus to the entire nervous system, he would endeavor to so order the technics, provided he had mastered its details, that day by day the reactive capacity might be elevated and tested and no harm ensue. As the shock and reaction increased day by day, the patient would emerge from the treatment with a ruddy hue. The increased circulation would endure more and more every day, languor and loss of appetite would cease, and if the patient did not fully recover under this domestic treatment, douches of the same temperature and with a pressure of from twenty-five to thirty pounds, preceded or not by hot-air baths, would bring about a final restoration of health.

In acute diseases like typhoid fever which were under the constant observation of the physician, the latter might at once note the result of an improper use of water and modify it, or, as was oftener the case, relinquish it altogether. But in chronic cases much damage might be done before the physician discovered it, if the treatment was not in the hands of trained and intelligent attendants who were under medical supervision. Too often the details were left to nurses, because physicians had not received instruction in the rationale and technics.

To enable him to administer water with precision Dr. Baruch had, without neglecting other hydriatic procedures, resorted chiefly to douches, in which he was capable of grading the temperature, duration, and pressure by means of an apparatus devised by him.

Dr. Baruch's conclusions were as follows: 1. The therapeutic application of water demanded at least as much care as the use of medicinal agents. 2. Owing to the flexibility of water as a remedial agent, greater demands were made upon the practitioner than in the use of medicines. 3. The best results might be obtained only by following an exact method in each case. 4. The reason that different results were obtained by different physicians from the application of water might be found in the technical errors committed on account of an erroneous conception of the rationale of hydrotherapy.

Dr. I. ADLER said that, according to the most modern medical views, hydrotherapy played an important rôle, and, as Dr. Baruch had emphasized, the application of water was so lax that clinically and diagnostically much less was accomplished than would otherwise be. But this was not alone the fault of physicians but, perhaps, as much of those who specially cultivated hydrotherapy. The latter seemed to be based more on personal impressions than on scientific data. We could not accept water, therefore, on the same basis as our medicinal agents. As an example, the physiological action of strychnine upon the spinal cord was exactly known, but this could not be said of the action of water. There should be more knowledge of the physiological action of water before we were asked to accept it as a scientific remedy. Dr. Adler thought it was going too far to accept the baths as the only remedy for typhoid fever. To him the statistics cited by Dr. Baruch, to prove that the mortality had been reduced to almost nothing, were new. Dr. Adler had used the baths more in hospitals than in private practice, where they were more difficult to apply. One might have very good results without baths, although the latter were one of our very best agents where the heart was feeble, delirium was intense, and somnolence occurred. But he could not accept Brand's rule, supported by Dr. Baruch, that 102° F. should be the signal for baths. Some patients became delirious at 100.5°; others might have a temperature of 105° and not be delirious. He expressed confidence in small doses of antipyretics, which afforded much relief, although he did not approve of their routine application for temperature reduction.

Dr. L. WEBER had always used cold baths in typhoid fever in the absence of kidney complications; he began the treatment with a large dose of calomel to cleanse the intestinal tract and disinfect it. In private practice he had not often had an opportunity of applying the Brand method. There seemed to be a silent but active opposition to it among the nurses. There was no doubt that Brand's method offered great advantages and was specially adapted for enhancing the resisting capacity of the nervous system. Dr. Weber used antipyretics in small doses for temperature reduction. In neurasthenia he had seen much of hydrotherapy. It seemed to him, however, that many of these patients recovered under any treatment.

Dr. A. ROSE opposed Dr. Adler's view that hydrotherapy was not based upon sufficient scientific investigations and experiments. It would seem that the statements of quacks were more regarded than these scientific experiments. He referred to the plethysmograph of Winternitz, by which the passage of blood driven from one part of the body by cold baths was demonstrated in other parts. Dr. Rose referred to his experience in erysipelas, and his observations with the permanent baths in obstinate rheumatism.

Dr. A. SEIBERT believed that the complaints made by hydrotherapists, that their doctrines had not been generally accepted by the medical profession, were to be charged to their own writings, in which they used many hyperboles. The Brand bath was not the cause of the reduction of mortality in typhoid fever during the past thirty years; it was rather the general improvement in the treatment of the disease. A large acquaintance with statistics enabled him to say that many sins were committed with statistics. In his hospital practice Dr. Seibert used the Brand method only on patients who were received in a somnolent condition. He preferred to reach the seat of the disease by cleansing and bathing the intestinal tract rather than to cool the skin and thus excite the nervous system. He regarded as novel the statement that the early adoption of the Brand method was capable of affording absolute protection against complications.

Dr. TALMEY believed that one reason for the nonacceptance of hydrotherapy lay in the objections of the public; another reason lay in the insistence of the hydrotherapist upon so many details, which no ordinary man was presumed to be capable of executing as well as they.

Dr. BARUCH insisted that the proof existed which showed that the action of water was more rational and scientific than that of any other remedy. Very little was known of the action of strychnine in non-toxic doses. It might be administered for days, weeks, and months without any subjective or objective evidence of its action in the pulse, blood pressure, respiration, etc. Our knowledge of its effects in disease came almost entirely from non-toxic doses. Of water we knew much more. It might be given with a precision afforded by a latitude of 70° of temperature (from 35° to 110°), a duration of from a second to many minutes, and a pressure of from one to forty pounds. There were also various methods of applying it, such as by packs, baths, douches, etc., by which its effects might be graded. He had subjected an attendant in the Hydriatric Institute to a tub bath of 80° F. for ten minutes, and the effect had been at once pronounced upon the pulse, as had been ascertained by the finger and the sphygmograph; the blood count had shown an increase of seven hundred thousand red cells and fifteen hundred white cells in blood drawn from the lobe of the left ear. Was there any analogous experiment with non-toxic doses of strychnine on record? There was no lack of scientific experiments on the action of water; they abounded within the past five years, having been made in Zuntz's and other laboratories by Breitenstein, Loewy, Knoepfelmacher, and others. Thayer, of the Johns Hopkins Hospital, had confirmed the statements of Winternitz and Rovighi, that the red and white blood cells increased after cold-water applications; the sphygmomanometer had demonstrated that the force of the heart was increased by them; Vinaj had shown with the ergograph of Mosso exactly how the muscular power was enhanced by them. Roque and Weil had shown that the urotoxic co-efficient of the urine in typhoid fever was increased greatly after the use of the cold bath.

That early cold baths prevented complications had been demonstrated as no fact in medicine had been demonstrated before. Dr. A. Vogl, medical director of the Bavarian army, had collected from the records of the Military Hospital of Munich all the cases of typhoid fever which had occurred during a period of forty years in that hospital. He gave the type of the disease each year, the symptoms, the treatment, the mortality, and the results of the autopsy. Since the strict bath treatment had been adopted he found that the mortality had been reduced to 2.7 per cent., while under other methods of treatment it had ranged from fifteen to thirty per cent. This proved that the result had not been due to a change of type in the disease, which the records showed to have varied from year to year during this long period, but that it had been entirely the result of the bath treatment, which had prevented lethal complications. Although the Brand method must be applied before the fifth day, every fever patient might be bathed with advantage. Dr. Baruch stated that he invariably used it in private practice, that he declined to treat the patient otherwise, and that he had been dismissed from a case but once for this reason.

Contrary to Dr. Talmey's naïve accusation, modern hydrotherapists had taken pains to simplify hydrotherapy and make it the common property of physicians. But this could not be accomplished so long as the latter persisted in their skeptical attitude. The most superficial study would demonstrate that water produced a thermic and mechanical excitation of the cutaneous nerve endings which operated upon motor and sensory tracts, and by a reflex upon the circulation, respiration, and secretions. These demonstrations were so abundant in literature that Dr. Baruch regarded it as an insult to the intelligence of his audience to reiterate them.

That a person might be aroused from syncope by the simple sprinkling of cold water upon the face was known to almost every layman, and the scientific explanation of this process was recognized by every tyro in medicine to be a powerful irritation by cold, which was conveyed from the cutaneous nerves to the central nervous system, and thence by reflex to the vagus. This seemed perhaps, too simple; rabbits and guinea-pigs were not required for the "scientific" explanation of this powerful effect. If such sacrifices were demanded, however, to establish water as a scientific remedy, the classical experiment of Maximilian Schuller upon trephined rabbits might be offered. Schuller had exposed the vessels of the pia, and, placing the rabbits in water at different temperatures, had observed the effects of these applications on the animals; he had demonstrated more clearly than had ever been done in the study of any medicinal agent the effect of these water applications. He had shown conclusively that the latter called into action a hydrostatic effect which made water a powerful agent for influencing the circulation of blood in an animal. Besides, Winternitz and others had demonstrated in the most exact manner by laboratory experiments that the corpuscular elements of the blood were subjected to such decided changes by water applications that no medicinal agent was capable of approaching their effects. A very fruitful but sadly neglected field, he thought, lay before the practical physician who did not meet hydrotherapy with a shrug of his shoulders.

To Dr. Talmey's insinuation that hydrotherapeutists were so insistent upon details that it was difficult for an ordinary mortal to follow their directions, Dr. Baruch replied by protesting against the tendency of physicians to leave the water treatment of chronic cases to bath attendants or to other nurses who maintained that they knew all about it, but really did not know anything but the mechanical part. Did not every physician who ordered a cold bath in typhoid fever give the nurse directions regarding temperature, friction, drying, duration, etc.? Why, then, should physicians leave such important details to a nurse when ordering a wet pack, douche, etc., in a chronic case? Would it not be far easier for physicians to consult some work on this subject and use their own judgment in ordering the necessary temperature, duration, etc.? It was just as absurd to leave these important details to self-important bath nurses as it was to leave the doses, etc., of a medicine to the druggist to prescribe and administer. Indeed, the latter would be safer, because the druggist was, at least, an educated man. As Vogl had said, leaving the treatment entirely in the hands of laymen had brought hydrotherapy into disrepute.

One thing Dr. Baruch desired especially to emphasize—namely, that in his article, as in all his writings, he had never lauded water as a universal remedy. Dr. Baruch maintained that his observations in hydrotherapy had been gathered in his capacity of family and hospital physician, in which respect he stood alone. As a practitioner of thirty-five years, he did not feel prepared to throw aside calomel, salicylic acid, morphine, quinine, and other approved remedies. Despite this fact, he felt compelled to acknowledge that water had served him well in the most desperate chronic cases after other most approved remedies had failed in his own hands as well as in the hands of his colleagues.

Book Notices.

Vorlesungen über allgemeine Pathologie. Von Dr. M. Löwit, o. ö. Professor der allgemeinen und experim. Pathologie an der k. k. Universität Innsbruck. Erstes Heft. Die Lehre vom Fieber. Mit 41 Abbildungen im Text. Jena: Gustav Fischer, 1897. [Preis, 5 Mark.]

In this volume Professor Löwit has presented in a thoroughly scientific manner the present state of our knowledge of the multitudinous problems connected with the complex physiological and pathological condition of fever. Beginning with a full discussion of the physiological regulation of heat production and its relation to the nervous system and the various functions of the body, the author proceeds to the study of the intricate factors concerned in the febrile disturbances manifested in disease. Among these factors, all of which are very fully considered, special interest attaches to the author's treatment of the aseptic fevers, in which he emphasizes the importance of the nervous element as well as of the antitoxic chemical changes in the tissues and fluids of the body. Every possible aspect of the problem of inflammatory fever is considered in detail, including the relation of bacteria, toxines, ferments, the products of metabolism, the altered states of the circulation, respiration, and nervous function, and the pathological changes in the viscera and secretions. From the author's long identification with the study of the blood there is a special value in the chapter relating to the changes in the blood of febrile states, and to his estimate of the significance of leucocytosis, phagocytosis, and the chemical changes in the blood in the limitation of infectious processes. No sufficient basis is found for the belief that fever is to be regarded, according to the historical tenet of Hippocrates, Sydenham, and Stahl, as a curative process on the part of Nature.

In view of the evident incompleteness of our knowledge, any discussion of fever at the present day requires the writer to assume a strictly judicial attitude in presenting the evidence, often meagre, bearing on essential points, a rôle in which the present author has been quite uniformly successful. In his preface the writer justly credits to experimental pathology and laboratory study the chief part of the knowledge we have acquired on the subject in hand. It is hardly necessary to say, therefore, that a treatise on fever from the pen of this trained experimental and general pathologist is a most valuable contribution to scientific medical literature, and will be found of great value to the clinician, the pathologist, and the physiologist alike.

Inebriety; its Source, Prevention, and Cure. By Charles Follen Palmer. New York, Chicago, and Toronto: Fleming H. Revell Company, 1897. Pp. 109. [Price, 50 cents.]

This little book is assured, by its very title, a wide popularity. A brochure, it discusses the subject of which it treats in a terse and common-sense way. The inebriate is regarded from the sociological and psychological standpoint, and the suggestions which are outlined for the prevention and cure of inebriety follow in logical sequence.

L'Ozène atrophiant. Clinique—pathogénie—séro-thérapie. Par Dr. Samy Lautmann, des Facultés de Vienne et de Paris. Paris: Henri Jouve, 1897. Pp. 7 to 102.

The subject of this brochure, simple ozæna, atrophic rhinitis, or, as some have named it, rhinitis atrophicans bacillaris, is well handled, the clinical aspects of the disease, diagnosis, and pathogenesis being carefully considered. The anatomo-pathological, the bacteriological, and the nervous theories are placed before the reader in a methodical manner, showing much painstaking research and study. The author has made numerous experiments, following the lead of Fränkel, Löwenberg, Stazza, Marano, Thost, Paulsen, and Gradenigo, whost bacteriological work in examining the mucous secretion in cases of ozæna is well known. The whole question of the microbic theory is ably discussed, and this portion of the little work is most interesting as well as instructive. The author does not consider, however, that this latter theory suffices to explain the pathogenesis of atrophic rhinitis, although the results obtained in serum treatment apparently demonstrate that the action of microbes plays a certain rôle in producing the symptoms of the disease. The nervous theory, that of a trophoneurosis as he calls it, is then brought forward and fully discussed.

In regard to the treatment of ozæna, the author pays particular attention to the recent experiments in serum treatment, as first undertaken by Belfanti and Della Vedova, in Italy, in 1896. He concludes from these and his own experiments in the same direction that subcutaneous injections of antidiphtheritic serum are a certain and rapid means of combating the symptoms of ozæna; furthermore, that the microbic theory has not yet been demonstrated, and that ozæna possesses the character of a trophoneurotic disturbance. Those especially interested will be repaid by the perusal of this little book.

Hypnotism and its Application to Practical Medicine. By Otto Georg Wetterstrand, M. D., Member of the Society of Swedish Physicians at Stockholm, etc. Authorized Translation from the German Edition by Henrik G. Petersen, M. D., Member of the Société d'hypnologie et de psychologie, Paris, etc. Together with Medical Letters on Hypno-suggestion, etc., by Henrik G. Petersen, M. D. London and New York: G. P. Putnam's Sons, 1897. Pp. xvii–166.

All physicians who come from Nancy, after having been witnesses of Bernheim's treatment of disease by suggestion, in the wards of the city hospital, are unanimous in their praises of the courtesy, gentleness, and sincerity of that illustrious man. And, although all Bernheim's students do not become adherents of his doctrine, none fail to be impressed by the successful operation and lack of display of the methods of the teacher.

The present volume bears the names of two of Bernheim's pupils. One, Dr. Wetterstrand, has already become known in Sweden as an exponent of psycho-therapeutics; the other, Dr. Petersen, is, we should judge, a younger man. Both are believers in Bernheim's views as to hypnotism, and the book itself is in many ways similar to Bernheim's, which was translated by Herter eight years ago.

To give a valuable criticism of Wetterstrand's book would be equivalent to discussing the views as to the nature of hypnotism—whether the contention of the Salpêtrière, as emitted by Charcot and still maintained by his pupils, is correct, that hypnotism is an hysterical accident which only occurs in persons suffering from hysteria; or whether, as is asserted at Nancy, hypnotism is not necessarily connected with hysteria, but may be induced in from eighty to ninety per cent. of all people. To argue this question falls without the reviewer's function. In the present volume psycho-therapeutics receives high praise, and its workings are illustrated by numerous clinical examples. Although it is improbable that hypnotism in America could be attended with any such success as the author professes to have had in Sweden, it must not be forgotten that he operates on a class of people which, for ignorance, suggestibility, and credulity, has no counterpart on this side of the Atlantic.

The American Yearbook of Medicine and Surgery. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-books of the leading American and Foreign Authors and Investigators. Collected and arranged with Critical Editorial Comments by J. M. Baldy, M. D., Charles H. Burnett, M. D., Archibald Church, M. D., Arthur H. Cleveland, M. D., Colman W. Cutler, M. D., J. Chalmers Da Costa, M. D., W. A. Newman Dorland, M. D., Louis A. Duhring, M. D., Virgil P. Gibney, M. D., Homer W. Gibney, M. D., Henry A. Griffin, M. D., John Guitéras, M. D., C. A. Hamann, M. D., Howard F. Hansell, M. D., Barton Cooke Hirst, M. D., E. Fletcher Ingals, M. D., W. W. Keen, M. D., Henry Leffmann, M. D., Henry G. Ohls, M. D., Hugh T. Patrick, M. D., William Pepper, M. D., Wendell Reber, M. D., David Riesman, M. D., Louis Starr, M. D., Alfred Stengel, M. D., G. N. Stewart, M. D., and Thompson S. Westcott, M. D. Under the general Editorial Charge of George M. Gould, M. D. Profusely Illustrated. Philadelphia: W. B. Saunders, 1897. Pp. 12 to 1257. [Price, $6.50.]

Last year the *Yearbook* received a long and favorable criticism in this journal. We welcome its second appearance, which more than justifies the prediction that it would prove to be a work really needed by the medical profession. Evidently an enormous quantity of matter has been reviewed, and all that relates to essential medical progress has been selected and brought before us clearly summarized under sixteen special headings. In each department the editorial comments are in the main brief and conservative, and bring out manifest errors and differences of opinion.

There have been but few changes in the editorial staff. The most noteworthy is in the department of dermatology, the editorship of which Dr. Duhring has assumed.

There is a marked improvement in the general appearance of the book, due in a great measure to an acceptable change in the quality of the paper. On every page important subjects are brought out in prominent type and the illustrations are more satisfactory. A commendable new feature is a preface to each department giving a general review of the year's work.

In general medicine we find a continued activity in the line of experimentation and investigation, with the promise of useful results in the near future. A great amount of laboratory work has been done with the serums, toxines, and antitoxines, and in bacteriology and chemistry, which will apparently crystallize into more definite knowledge in a comparatively short time. Winkler's *résumé* in regard to thyreoid treatment shows that a conservative spirit must pervade all such research. He concludes that it has been useful in ordinary goître, but very uncertain in Graves's disease, and Stabel holds that it is even contraindicated. Surgical operations, however unfavorable in many cases, have given rise to more cures than any other method of treatment.

In view of the many reports of brilliant results from the use of bone marrow in pernicious anæmia, we are glad to find the editor asserting that dogmatic statements are not warranted.

Investigations in regard to intestinal antisepsis are interesting. It is doubtful whether the many drugs we use for this purpose accomplish their object. The surest method is by administering laxatives and enemata and, when possible, using sterilized food.

The importance of the Röntgen rays as a means of diagnosis is undoubted, but as yet they are mainly applicable in the recognition of fractures, dislocations, and affections involving the bones and in the detection of the presence of foreign bodies. No definite results have been reached from their use in general medicine.

The section on surgery is admirably written, and it is to be regretted that the editor did not follow the general plan of prefacing the article with a summary of the year's progress. Marmorek has obtained striking results in erysipelas from the use of an antistreptococcus serum. Aseptic and antiseptic surgery and anæsthesia and anæsthetics receive very careful attention, as they should in view of their general importance. At the end a number of pages are devoted to a consideration of military surgery.

In the section on obstetrics and gynæcology the advantages and disadvantages of certain major operations continue to be discussed. In regard to anterior fixation of the uterus, the question is asked, Which is the greater evil, the gynæcological condition or the subsequent obstetrical difficulties? Symphysiotomy enthusiasm is apparently finding its proper level. Bicycling for women, in spite of opposition, is a valuable aid in obtaining outdoor exercise. It is now not a question of use, but of abuse.

In the present state of medical science we look to pathology and bacteriology for the basis of future advancement, and all important work during the past year is brought out in this department. The work in the department of pædiatrics has brought forth nothing especially new, though much of it is of more than ordinary importance. Among nervous and mental diseases, hysteria receives much attention, as is shown in the subdivisions on the diagnosis of hysteria, hysterical pseudomeningitis, hysterical eye symptoms, hysterical contractures, hysterical spasm of trunk muscles, hysteria and tetany, hysteria in children, and hysterical breast—a formidable array.

The sections on orthopædic surgery, ophthalmology, otology, diseases of the nose and larynx, and dermatology and syphilis are well edited and contain a fund of information which will be appreciated not only by specialists, but by the general practitioner, who has little time to devote to journal literature.

Investigations in regard to remedial agents old and new, recent additions and their value, and discussions in experimental therapeutics are of especial interest to the practising physician. The section on materia medica covers the ground well and we are glad to see more of a tendency to consider new drugs, whether useful or not. We note that here eucaine is said not to differ from cocaine in the promptness, duration, and intensity of the anæsthesia caused by it, while in the section on general surgery it is said that the anæsthesia from eucaine is more profound, prolonged, and widespread.

The closing sections of the book are on anatomy, physiology and medical jurisprudence, hygiene, and clinical chemistry. In physiology we note that the absorption of inorganic iron can be demonstrated, that intestinal bacteria are not essential to life and growth, and that hydrochloric acid is not formed in the gland cells but at the surface of contact of the stomach wall with the gastric contents, and that its source is the sodium chloride in food.

In conclusion, we may say that a review of a book covering so wide a field simply can not do more than give some idea of the value of the subject matter, and we do not hesitate to give the commendation which this work deserves.

BOOKS, ETC., RECEIVED.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, member of the Academy of Medicine, etc.; Fournier, Professor of the Faculty of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Leon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1897. Part VIII. Pp. 175 to 194. [Price, $3 each part.]

Vita Medica. Chapters of Medical Life and Work. By Sir Benjamin Ward Richardson, M. D., LL. D., F. R. S. London, New York, and Bombay: Longmans, Green, & Co., 1897. Pp. xvi–495.

Digest of Criticisms on the United States Pharmacopœia. Seventh Decennial Revision (1890). Published by the Committee of Revision and Publication of the Pharmacopœia of the United States of America (1890–1900). Part I. Comprising Abstracts of Papers up to July 1, 1896. New York, 1897. Pp. xxi–183.

Die Meningitis serosa acuta. Eine kritische Studie. Von Dr. med. George Boenninghaus, in Breslau. Wiesbaden: J. F. Bergmann, 1897. Pp. viii–99.

The Bubonic Plague. A Study of the Literature on the Subject. By Leon Solomon, M. D., Louisville, Ky. [Reprinted from the *American Practitioner and News.*]

A Report of a Case of Salpingo-oophoritis and Appendicitis. Operation; Recovery. By P. Michinard, M. D., New Orleans, La. [Reprinted from the *New Orleans Medical and Surgical Journal.*]

Röntgen-ray Skiagraphs. Tubercular Knees; Clubfoot; Glass in Finger; Deformed Hand; Knock-knees, etc. By De Forest Willard, M. D., Philadelphia. [Reprinted from the *Transactions of the American Surgical Association.*]

Three Cases of Pelvic Hæmatoma. By William Gardner, M. D., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

Introductory Lecture on Hygiene, Public Health, and Preventive Medicine. By Robert Craik, M. D., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

Fracture of the Scapula by Muscular Action Alone. By C. J. Edgar, M. D., of North Hatley, P. Q. [Reprinted from the *Montreal Medical Journal.*]

Three Cases Illustrating the Value of the Bacteriological Diagnosis of Leprosy for Public Health Purposes. By Wyatt Johnston, M. D., and W. H. Jamieson, M. D., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

On Retroperitoneal and Perineal Lipomata. By J. George Adami, M. D., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

When Symptoms are Absent. By Thomas Jackson, M. D., Rochester, N. Y. [Reprinted from the *Montreal Medical Journal.*]

The Comparative Mortality of the White and Colored Races in the South. By J. T. Walton, M. D., San Antonio, Texas. [Reprinted from the *Charlotte Medical Journal.*]

Antitoxine and Diphtheria. By W. H. Seibert, M. D., Steelton, Pa. [Reprinted from the *Journal of the American Medical Association.*]

Diseases of the Eye and Ophthalmoscopy. A Handbook for Physicians and Students. By Dr. A. Eugen Fick, University of Zurich. Authorized Translation by Albert B. Hale, A. B., M. D., Consulting Ophthalmic Surgeon to Charity Hospital, Chicago, etc. With a Glossary and One Hundred and Fifty-eight Illustrations, many of which are printed in Colors. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. xvi–17 to 488. [Price, $4.50.]

Telepathy and the Subliminal Self. An Account of Recent Investigations regarding Hypnotism, Automatism, Dreams, Phantasms, and Related Phenomena. By R. Osgood Mason, A. M., M. D., Fellow of the New York Academy of Medicine. New York: Henry Holt and Company, 1897. Pp. viii–343.

Practical Pathology for Students and Physicians. By Alfred Scott Warthin, Ph. D., M. D., Instructor in Pathology, University of Michigan. A Manual of Laboratory and Post-mortem Technics, designed especially for the Use of Junior and Senior Students in Pathology at the University of Michigan. Ann Arbor, Michigan: George Wahr, 1897. Pp. 3 to 134.

Chirurgie des voies urinaires. Études cliniques. Par le Dr. E. Loumeau, Professeur libre de clinique des maladies des voies urinaires. 2me volume. Avec planches hors texte. Bordeaux: Feret et fils, 1897. Pp. 287.

Ueber Eierstockstuberkulose. Von Dr. J. Schottlaender, Privatdozent an der Universität Heidelberg. Mit 4 lithographischen Tafeln. Jena: Gustav Fischer, 1897. Pp. 169.

Abhandlungen zur Gesundheitslehre der Seele und Nerven. I. Arbeit und Wille. Ein Kapitel klinischer Psychologie zur Grundlegung der Psychohygiene. Von Dr. E. Hallervorden, Privatdozent in Königsberg. Heft I. Wurzburg: A. Stuber, 1896. Pp. vi–41.

Proceedings of the American Medico-psychological Association, at the Fifty-second Annual Meeting, held in Boston, May 26–29, 1896.

Reports of the Trustees and Superintendent of the Butler Hospital for the Insane. Presented to the Corporation at its Fifty-third Annual Meeting, January 27, 1897.

The Twenty-sixth Annual Report of St. Catherine's Hospital, Brooklyn, N. Y. For the year 1896.

The Professional and Technical Schools, especially those of Medicine, in their Relation to the College Course. By J. T. Eskridge, M. D., of Denver, Colorado. [Reprinted from the *Colorado Medical Journal.*]

A Clinical Study of a Case of Double Chorio-retinitis in the Macular Regions, following a Flash of Lightning and a Flash from Burning Lycopodium. By Charles A. Oliver, M. D., of Philadelphia. [Reprinted from the *International Medical Magazine.*]

Mental Automatism in Epilepsy. A Psychological Study. By L. Pierce Clark, M. D. [Reprinted from the *Boston Medical and Surgical Journal.*]

Permanganate of Potassium in the Treatment of Leg and other Ulcers. By G. Maxwell, Christine, M. D., of Philadelphia. [Reprinted from the *North American Journal of Homœopathy.*]

A Study of the Lingual Tonsil. By Lewis S. Somers, M. D., of Philadelphia. [Reprinted from the *Laryngoscope.*]

A Few Thoughts concerning Fractures. By William B. Van Lennep, M. D., of Philadelphia. [Reprinted from the *Hahnemannian Monthly.*]

History of Surgery. By William B. Van Lennep, M. D. [Reprinted from the *Hahnemannian Monthly.*]

Ectopic Pregnancy, with Cases and Remarks. By Beverly MacMonagle, of San Francisco. [Reprinted from the *Occidental Medical Times.*]

The Treatment of Syphilis. By Henry Alfred Robbins, M. D., of Washington, D. C. [Reprinted from the *Maryland Medical Journal*.]

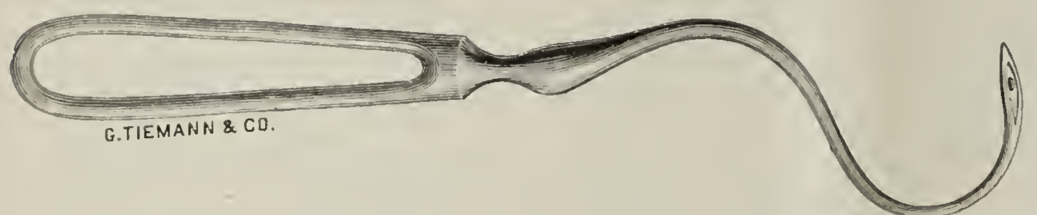
New Inventions, etc.

A PRACTICAL LIGATURE CARRIER.

By James C. Davis, M. D.,

SURGEON IN CHIEF, CORA LYNNE PRIVATE HOSPITAL, ROCHESTER, N. Y.

The author has given this instrument a thorough test in ligating uterine arteries, broad ligaments, and the pedicles of abdominal tumors, and has no hesitation in presenting it to the medical profession as being the most practical, clean, and light general carrier made. The illustration is a side view showing at a glance the general appearance with the curves and handle on the same plane. The point is blunt with a grooved eyelet, and the shaft has two curves, an inch and a quarter deep, which allow the point to be carried through the tissues, and in vaginal work the second curve gives ample room for the perinæum, and when the handle is lowered the point of the carrier threaded with ligature material is readily brought into plain view. The instrument is made by Messrs. Tiemann & Co., of New York.



6 Chestnut Street.

Miscellany.

The Determination of the Situation of Foreign Bodies in the Eye by Means of the Röntgen Rays.—At a meeting of the Section in Ophthalmology of the College of Physicians of Philadelphia, held on March 16th, Dr. William M. Sweet presented, by invitation, a novel apparatus for this purpose. By means of three horizontal rods of aluminum, each with a rounded extremity to be adjusted to the inner and outer canthus and to the centre of the upper lid, held in position on the patient's face by a band similar to that of the head-mirror, shadows were cast on the sensitive film. He preferred the double film to the glass photographic plate on account of its flexibility and lightness, and because mistakes in diagnosis incident to imperfections in one film or plate were avoided. The Crookes's tube, held thirteen inches upward and backward opposite the parietal bone, emitted rays that passed through the external orbital wall, the tissues surrounding the ball, and the ball itself, and were received on the film, which had been thrust as far as possible into the inner canthus and maintained in position by a holder. Two exposures were made, one with the tube on a line with the eye, and the other at an angle of twenty-five degrees with the horizontal plane. The approximate position of the foreign body was determined by attaching the apparatus to an upright support and so placing a lighted candle that the shadow cast by the indicators would fall like those thrown by the Crookes's tube. A small object was then held before the candle in such a position that its shadow was coincident with that of the foreign body. A record having been made of this line of shadow, the candle was moved until the shadows of the indicators corresponded to those on the second negative. The object was again employed and a second impression recorded. Where the two lines of shadow of the test object crossed should be the situation of the foreign body in the eye. Knowing the distance of the centre of the cornea from a fixed point of the apparatus, one could measure the distance at which the foreign body in the eye lay behind this point, and thus ascertain its approximate position.

Hydrozone in the Topical Treatment of Chronic Gastric Catarrh.—Dr. J. M. G. Carter, of Chicago (*American Therapist*, January, 1897), speaking of the stage of atrophy, says that the functions of absorption and motion may be fairly well performed, but the chief difficulty is with the digestion of proteids. The local treatment has two objects, mainly, although a third is sometimes borne in mind. The first object is the removal of *débris* and foreign material. The second is the cleansing of the mucous membrane and the destruction of micro-organisms and their removal, in order that the intestines may not receive bacterial products from the stomach. The third object sometimes kept in view in the local treatment by douching is a degree of stimulation of the functions of motion and absorption and the tonic effect to the gastric walls which follows those washings. The first object is accomplished by the use of sterilized water or a three-per-cent. solution of sodium bicarbonate. The second object is effected by douching the walls with a green-soap solution or a solution of hydrozone. The latter agent in five-per-cent. solution gives very pleasing results. The third object may be secured by using hot or cold water for the douche.

Medication in the Gouty and Rheumatic Diatheses—Dr. George W. Tobias (*Kansas City Medical Record*, March, 1897) says that, while there can be no doubt of the value of colchicum and the salicylates, the depressing action of colchicum preparations and their uncertainty have caused them to be regarded with suspicion, especially by the younger generation of physicians. Where sodium salicylate produces no beneficial result in the rheumatic diathesis, it may be laid to the origin of the drug, and in all cases he has found that that derived from carbolic acid and carbon dioxide is vastly inferior to the salicylate existing as methyl salicylate in the sweet birch. This is the most potent of salicylates (synthetical or organic), and is perfectly safe and free from all objections. An elegant and perfectly safe preparation of the drugs, and one which in his hands has never failed, is colchi-sal (colchicein-methyl salicylate). This drug is dispensed in capsules of twenty centigrammes and each contains a quarter of a milligramme of the active principle of colchicum. Dr. Tobias adds short accounts of three cases.

Digitalis in Pneumonia and Influenza.—In the *Revue de médecine* for March 10th M. Gingeot and M. Deguy publish a detailed account of twelve cases in which they employed digitalis with excellent results, especially in influenza. From a clinical point of view the authors take into account only the different forms of the infection of influenza, which are so variable that the diagnosis is often extremely difficult. Influenza may simulate tuberculosis during the cavitary period, or dilatation of the bronchi; it may simulate typhoid fever and miliary tuberculosis. It is extremely polymorphous in its manifestations, a disease of surprises, and it is necessary to become acquainted anew with its pathology and its therapeutics in each instance.

The authors think that digitalis is useful from two points of view: First, as an element of diagnosis in acute granular tuberculosis or in typhoid fever, for in these two affections they have employed digitalin without ever obtaining defervescence; second, as a curative agent.

The authors give an account of their mode of treatment and the advantages derived therefrom. In pneumonia no deaths occurred in ten cases, and in two cases of double pneumonia the favorable results were striking. On the day after the administration of the digitalin the patients experienced a sensation of well-being which was quite peculiar; if delirium existed it ceased, and the albuminuria diminished and finally disappeared. The antithermic action was remarkable; ventricular systole occurred with more energy, and the heart's action became slower; the arterial tension increased, and the pulse became stronger.

According to M. Huchard, diuresis is established promptly, and, during four or five days, it contributes to the elimination of all the toxines produced by the infectious disease. This fact was ascertained by the authors in some cases, for they were able to verify it in parallel charts of the urine and the temperature; when one fell the other rose. This, however, was not always constant.

Congestion seems to disappear more rapidly and the exudation is more rapidly absorbed. On the whole, digitalin accelerates the normal evolution of pneumonia, and is the best adjuvant to spontaneous recovery, for it must be borne in mind that this medication is not antipneumonic, but is a compensatory one which makes use of the healthy organs in order to act on the diseased organ. It is not the pneumonia that is dangerous; it is the exhaustion of the organism, and it is this which is combated or prevented by the digitalin treatment. According to Huchard, although the disease is in the lungs, the danger is to the heart and the nervous system, and with this treatment the disease follows its normal evolution, but the organism is strengthened. Concerning influenza, all that has been said of pneumonia is applicable in every respect regarding the broncho-pulmonary tendencies of this affection. These forms, however, are not dwelt upon by the authors; they call attention simply to the success obtained with digitalin in gastro-intestinal influenzas simulating primary gastric derangement, typhoid fever, or acute tuberculosis.

The drug has a particularly favorable action when the pulse is weak, small, and rapid. Bradycardia, which is sometimes observed during the course of influenza, does not seem to be a contraindication to the employment of digitalin, although the effects are less certain. Several causes, besides, seem to attenuate or to retard the action of the drug; these are obstinate constipation or alternating attacks of fœtid diarrhœa. It is, in this case, necessary to combat these two symptoms before giving digitalin.

Under the influence of this drug the urine increases, with an abundant precipitate of urates; the temperature falls and becomes regular; the pulse becomes normal, and the digestive functions return to their normal condition owing to the influence alone of the restoration of the cardio-vascular system. Delirium, sweating, and the condition of stupor cease; the general condition is wonderfully ameliorated, and recovery takes place in a short time.

Digitalis arrests epistaxis, but it does not prevent a return of the influenza when the patient is no longer under the influence of the drug. On the whole, it seems to attain its maximum effect in the broncho-pulmonary form of influenza, although it is also useful in the gastro-intestinal form and in the grave or complicated forms in which the cardio-vascular system is involved and weakened.

Scarlatinal Nephritis treated with External Applications of Pilocarpine.—In the *Indépendance médicale* for March 24th M. Pettidi, of Smyrna, gives an account of an attack of scarlatina which he contracted while attending a patient with that disease. The disease manifested itself in the most irregular manner; there was no eruption, but there was an erythematous angina with a pultaceous exudation. The temperature never exceeded 102.1° F., and from the first day there was a rather intense nephritis accompanied by lumbar pains, oliguria, and some uræmic symptoms; there was also a slight œdema of the legs, especially pronounced in the ankles. The urine was very dark and contained from forty-five to sixty grains of albumin to the quart. A microscopical examination revealed a quantity of mucin, blood globules, leucocytes, epithelial cells, and casts.

As a treatment, an absolute milk diet and some diuretic and alkaline drinks were prescribed, and revulsion was practised in the lumbar region by means of wet and dry cupping. Three weeks afterward the urine became abundant, the albumin diminished, and, aside from some lumbar pain, the general condition was greatly ameliorated. At this time, without any appreciable cause, the disease broke out again, and oliguria set in with the same characteristics in the urine as had been seen in the first attack. M. Pettidi then resorted to the treatment recommended by M. Julia, as follows:

Every morning, after an application of dry cupping, the dorso-lumbar region was rubbed with an ointment composed of three ounces of vaseline and a grain and a half of pilocarpine. The region was afterward covered with a rather thick layer of cotton. Six days after this treatment was begun the urine became very abundant and clear, and exceeded the normal quantity; the density was from 1.013 to 1.017, and a microscopical examination revealed but few leucocytes. This treatment was continued for twenty-five days, and at the present time the urine no longer contains albumin, and diuresis is normal.

Some Clinical Peculiarities of Typhoid Fever in very Young Children.—In the *Annales de la Policlinique de Bordeaux* for March there is a long and comprehensive article on this subject, by Dr. Rocaz, of which the following is the substance: Having had occasion to observe cases of typhoid fever in children under five years of age, at which time, all authors agree, the disease presents an appearance which is often peculiar, the author feels justified in adding his observations to those already published, and in drawing the following conclusions:

The onset of typhoid fever in young children is more frequently sudden than in adults, and its appearance is often marked by a sudden elevation of temperature, the thermometer rising in a few hours from normal to 104° F. and more. Rillet and Barthez think this sudden onset indicates an altogether peculiar gravity of the disease.

The intestinal symptoms are generally less marked in children than in adults. There is a rather exact relation between the number and extent of the ulcerations on the one hand and the age of the patients on the other hand. The younger the children the fewer and smaller the ulcerations. Constipation is the rule during the early days of the disease; it is obstinate and does not yield sometimes until after the administration of several purgatives. When it does not continue during the course of the disease, it is replaced by a slight diarrhœa which presents nothing characteristic. Hence it may be readily understood that intestinal perforation and hæmorrhage are excessively rare in very young children. Enteritis, on the contrary, is a more frequent complication in children, and it is characterized by the persistence of the diarrhœa after defervescence; this diarrhœa is rebellious and sometimes requires an energetic treatment and a strict diet. Vomiting is frequent enough in children to be regarded as a part of the regular train of symptoms of the disease. Lack of appetite in young children is so pronounced as to become almost a veritable danger. M. Moussous has cited two cases in which the children refused everything, except a few mouthfuls of pure water, for twelve days.

With regard to the appearance of the tongue, the author states that in many cases observed by him in very young children, in which the temperature rose to 102.6° and 104.5° F., the tongue remained moist.

The temperature is very nearly like that observed in adults, although it often assumes a less regular progress in children. This irregularity has led to much discussion in regard to its prognostic value. The only fact that seems to the author worthy of mention, concerning the temperature in young children, is the very frequent occurrence of hyperthermia and the facility with which it is borne by the patient.

Dicrotism of the pulse has never been observed in very young children. During the height of the disease the pulse is generally regular, ranging from 100 to 140 pulsations a minute. During defervescence and convalescence, however, it may present a peculiar characteristic which has been fully dwelt upon by de Gassicourt and Revilliot, who occasionally saw the pulse become slower and present irregularities which caused it to resemble the pulse in certain stages of meningitis. This peculiarity, which lasted from eight to fifteen days, did not seem to have any unfavorable significance. The irregularity of the pulse in the febrile period is more serious, for it indicates then a cardiac exhaustion which often presages death. The heart, however, is rarely seriously involved in typhoid fever in young children; myocarditis is exceptional and always slight, and sudden death has been observed only two or three times.

Thoracic symptoms are in the normal forms less marked than in adults, although broncho-pneumonia is a very grave complication in abdominal typhus in children under five years of age.

Lenticular rose-colored spots are the only pathognomonic symptom of typhoid fever in young children; they present no peculiar characteristics either in their frequency, their time of appearance, or their prognostic importance. Epistaxis is considered by the author as being altogether exceptional in young children. Sudamina are frequently observed, and they generally appear shortly after the red spots. Livid streaks near the articulations, particularly the knees, are peculiar to infancy, and they are due to an increase in growth which is sometimes surprisingly rapid. The frequency of desquamation is also a peculiarity of infancy.

With regard to the possible complications of typhoid fever in young children, the author mentions those of the nervous system, which, he says, are seldom observed in children under five years of age.

Other complications, such as arthritis, otitis, thrush, torticollis, stomatitis, and phlegmasia alba dolens, are also frequent in very young children. Abnormal eruptions are more frequent in children than in adults.

The duration of the fever is shorter in infancy. According to some authors, relapses occur more frequently, but they are usually less serious than the first attack.

Convalescence is, therefore, rather rapid, and the child recovers with a rapidity that is sometimes astonishing. The aphasia of convalescence, which is very frequent in children, is nearly always curable.

The prognosis of typhoid fever in young children is dependent upon their age. It is very grave in children under three years of age, not so serious at four years, and nearly always favorable at five years and over.

Ichthyol in Gynæcology.—In the *Journal de médecine de Paris* for March 28th Dr. Lorain publishes an account of his experience with this drug in his private practice, with a description of his mode of treatment, and the results he has derived from it, as follows: 1. Ichthyol, employed as a vaginal application and in inunctions on the abdominal wall, has an analgetic action which shows itself from the first application. This action is never absent, and becomes more pronounced if the treatment is persevered in. 2. To the purely symptomatic and subjective effects may be added its antiphlogistic action. The numerous cases in which this treatment was employed by the author differed greatly as regarded their gravity and the duration of the affection, so that the results obtained were not always identical. In a general way, under the influence of repeated ichthyol applications during a variable period, inflammatory lesions of the annexa, of the peritonæum, and of the pelvic cellular tissue had a marked tendency to resolution. The annexa diminished in size and regained their mobility, and at the same time they became less sensitive to pressure. The pelvic exudations became absorbed and the vaginal vault gradually regained its normal flexibility. In cases of slight or medium intensity, but recent, recovery was nearly always obtained in from three to four months, without being obliged to resort to any other mode of treatment; the patient was also able to keep up her daily occupations. In the graver cases which were complicated by acute or subacute attacks of inflammation of the peritonæum of the annexa, a very marked amelioration was always obtained by employing revulsion on the abdomen and rest in bed in addition to the ichthyol treatment. In old salpingo-oophoritis complicated with sclerous annexal peritonitis intravaginal compression practised with saturated ichthyol tampons, associated with massage, gave excellent results. 3. Among the patients observed by the author there were many who suffered from an inflammatory lesion of the neck of the uterus, and some presented symptoms of elytritis; these patients appeared to be greatly benefited by the application of ichthyol. 4. Administered by the digestive tract, ichthyol favored the digestive functions by its tonic action on the stomach; it raised the arterial tension, and thus contributed to favor the absorption of the pelvic exudations.

Dr. Lorain concludes that, on the whole, ichthyol, owing to its analgetic, antiseptic, antiphlogistic, and resolvent action, may render real service in gynæcology if its employment is judiciously associated with other therapeutic measures, according to the indications.

THE NEW YORK MEDICAL JOURNAL, April 24, 1897.

Original Communications.

THE EXPERIMENTS ON THE FARADIZATION OF THE STOMACH OF ANIMALS.

A REPLY TO DR. M. EINHORN'S CRITICISM, WITH A COMMUNICATION OF SOME NEW EXPERIMENTS.

By S. J. MELTZER, M. D.

[From the Physiological Laboratory of Columbia University, at the College of Physicians and Surgeons, New York.]

I. In a paper read before the Association of American Physicians * I gave a condensed account of my experiments on the effects of faradization of the stomach and intestines of certain animals. It was my intention to make a strictly scientific statement of bare facts as I obtained them by physiological methods, without utilizing them for any practical purpose; and to avoid any misinterpretation, I expressly added that "my statements have reference only to the animals I have experimented with." My cautiousness, however, did not help me. Dr. M. Einhorn,† to my regret, has managed to discover that an "investigator has recently written against this therapeutic means (meaning the direct electrization of the stomach), basing his views entirely upon experiments made on animals." Desiring to defend the value of the direct electrization of the stomach as a therapeutic agent, Einhorn undertook, as he believes, a repetition of my experiments upon animals, and states that the results he obtained were in contrast to those I have stated, and were in perfect harmony with his view of the value of direct faradization of the stomach. In other words, he finds that those of my statements which are plain observations are simply not true, and those which are merely conclusions are false. Einhorn did not touch upon my experiments on the intestines—they do not seem to interest him; neither did he try to defend the percutaneous electrization, because this also does not interest him; nor did he say that even one single fact of my statements seemed to be somewhat true. In his experiments and his paper he had only one object in view, and that was to show that direct electrization was an efficient therapeutic agent, and that I, in my attack upon it, was totally wrong. Any reader who does not take the trouble of studying and comparing both papers carefully might think that Einhorn had simply repeated my experiments and found my statements to be untrue, and that the discussion was now reduced to the simple question of veracity between Dr. Einhorn and myself. I believe, however, I shall be able to reduce the importance of the experiments of Dr. Einhorn to their exact value without being compelled to touch upon the sensitive point of veracity. And as to this, I shall show later a plain way out of this dilemma.

II. It is an indispensable requirement for any experimenter who undertakes the task of verifying the statements of a predecessor, to observe at the repetition exactly the same conditions under which the original investigator professes to have observed his facts. Otherwise, the second man may bring out new results, but can not pretend to have reinvestigated the statements of the first experimenter. Let us now apply this simple desideratum to the experiments of Dr. Einhorn, who says he has shown that his results were in contrast to mine.

1. I have experimented on dogs, cats, and rabbits. I state that "the results obtained were verified in all the three kinds of animals; the greatest number of experiments, however, were made on dogs, which are best suited for our purpose. The stomach of the rabbit is not a good object for studying the main phenomenon of our results." Frogs I have only used to see whether in this animal too the mucous membrane is less responsive than the serosa, a point which is not disputed by Einhorn; and even with regard to this point I say: "But this thick-walled stomach, with its small and slow contractions, was certainly not a desirable object for an extensive study of our phenomenon." For any of the other experiments frogs were never used. Now, Einhorn counts up seventeen experiments; twelve of them were made on frogs, two on rats, two on rabbits, and one on a dog. As I have not experimented on frogs (except as above stated) or rats, experiments on these animals do not concern me. There remain, therefore, only the experiments on the two rabbits and the one dog for a comparison with my results. And as I have stated already that the stomach of rabbits is not a good object for our study, especially when the animals had not previously fasted, which seems to have been the case in Einhorn's experiments, there practically remains only his single experiment upon the one dog upon which he bases his assertion that his experiments furnished results which were in contrast with those stated by me! We shall soon, however, see whether even this experiment has shown what Einhorn professes to have found. But even if it did, what does a fact signify when found only in a single experiment? I have expressly stated that "the results of my experiments represent only the rule, and do certainly not exclude the possibility of exceptions."

2. In my paper I have described in detail the method which I employed in the faradaic stimulation. Any one who would use the same Du Bois-Reymond's inductorium with a Grove cell, and have the secondary coil at the same distance from the primary, as in my experiment, would have exactly the same strength of current which I employed, and would thereby be in a position to ascertain whether certain reports of mine were correct or not. Dr. Einhorn does not mention at all what sort of apparatus and cells and what strength of current he employed;

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* S. J. Meltzer. An Experimental Study of Direct and Indirect Faradization of the Stomach and Intestines. *New York Medical Journal*, June 15, 1895.

† Max Einhorn. *New York Medical Journal*, December 12, 1896.

he says only that a faradaic current does this and that. He speaks sometimes of a weak current, without giving us the means of judging what he understands by a weak current. We get, however, an idea of the strength of the faradaic current which Einhorn was employing when we read in his Experiments II and III that, when both electrodes are applied to the mucosa of the stomach, "the faradaic current produces contractions of the whole body." Such a current I never applied, and especially when I wished to study the local effects of a stimulus. Dr. Einhorn had no means by which he could compare the strength of his currents with that of those used by me, and he thus could not draw any conclusion as to the correctness of certain of my statements.

III. Let us now turn to the substance of Dr. Einhorn's assertions. In my experiments, so far as the stomach alone is concerned, there are four specific points which could come into consideration in our present discussion: 1. The fundus responds but little to faradaic stimulation. 2. A faradaic current which brings forth a maximal contraction when applied to the serosa produces no contraction when applied to the mucosa of the stomach. 3. When one electrode is applied to the serosa and the other to the mucosa, no contractions follow when the electrodes are separated by about two centimetres. 4. When one electrode is within the stomach and the other is on the skin near the stomach, no current brings forth a contraction of the stomach, etc. Einhorn does not mention the fourth point at all, though it is the main statement which could have some bearing upon the direct faradization of the stomach as a therapeutic measure. In taking up the three other points, Einhorn says that only the first and the third points "have direct reference to experiments on animals, the accuracy of which can only be ascertained by similar trials." The similar trials conducted by him led him to the assertion that his results were not in harmony with my statements. Leaving out for the present the analysis of Einhorn's peculiar handling of my statement contained in the second point, I shall now enter into a discussion of those two statements of mine which are directly denied by Einhorn.

1. When I made the observation that there was quite a striking difference between the contractility of the pyloric part of the stomach and that of the fundus, I thought it to be an entirely new fact. Now I know that a similar observation was made before me by von Ziemssen.* He also has found that the fundus of the stomach of dogs is nearly non-contractile when stimulated with the faradaic current. Some months after my communication Moritz † reported that during his studies upon the internal pressure of the human stomach, he had never observed any increase of the pressure taking place within the fundus; which means that the fundus never contracted during the observation. In the light of my own recent observations the fact of the diminished contractility seems to be rather an important one. I have studied it lately again and with greater detail, and will formulate my newer observations at a later point. I have already stated in my first paper that in the stomach of cats I could not establish such a difference of contractility between the fundus and the pyloric part. My statements, then, could surely not have been interpreted as being a generalization for all kinds of animals. As to the very small tubelike stomach of frogs, it did not even enter my mind to test whether there was a difference between the fundus and the pyloric portion. In dogs, however, the phenomenon is such a striking one that it is rather surprising to find that any one whose mind is already bent upon this point should not notice the outspoken difference in the contractility between the right and the left part of the stomach. The fact is, however, that in the single experiment XVII which Einhorn made on a dog, he describes his observations as follows: "The bipolar electrode is applied at the serosa of the fundus; a weak faradaic current produces a local contraction which is soon followed by a peristaltic contraction. . . . If the bipolar electrode is applied to the serosa of the pyloric portion of the stomach, the faradaic current produces *contractions of a more intense nature.*" That means that even in this single experiment Einhorn himself has indeed seen a distinct difference in the degree of the contraction between the pyloric part and some part of the fundus. Outside of this experiment on the dog, we are only concerned, as I have shown above, in his two experiments on rabbits. In one experiment (VII) it is not mentioned at all that the fundus was stimulated. In the other one, however, it is stated that the entire "gastric region," including the whole fundus, contracts when stimulated with the faradaic current. Whether there was any difference in the degree of the contraction or not is not expressly noted. But even if there was no difference at all between pyloric part and the fundus, what weight can this single experiment have? and an experiment on a filled stomach of a non-fasting rabbit, the contractions of which are at all times quite indistinct! However, above all, it is my impression that Einhorn never had before him the entire fundus of any of the larger animals he experimented upon. In order to obtain a full view of the left part of the stomach it is necessary to have this part, together with the spleen, lifted out from the abdominal cavity. To keep it in view after lifting it up, I have usually had it supported with some instruments or sewed to the abdominal wall, which latter is the more practical method. Einhorn, however, states only: Abdomen opened, or stomach exposed, or (on one occasion) stomach pushed forward—which does not seem to mean that he had the spleen and the left end of the stomach entirely out of the abdominal cavity. What Einhorn has seen and stimulated might, then, have been only the middle and a small portion of the left side of the stomach.

But leaving any explanation aside, the bare facts in the three experiments of Einhorn, the only ones which might concern us, are the following: In the single experiment on the dog there was indeed a distinct difference in the degree of contraction between the pyloric part and the fundus; in one rabbit the bipolar stimulation of the serosa of the fundus was not attempted at all (it is at least not mentioned in the experiment), and in one non-fasting rabbit the bipolar stimulation of the fundus brought on contractions. It is, then, on the basis of this single experiment on the rabbit, with its, in many respects, doubtful value, that Einhorn bases his assertion that the results of his experiments were in contrast to those of mine. And on the basis of these experiments he believes himself justified in stating, in a general and a positive way, "that in rabbits, rats, dogs, and frogs," the bipolar (faradaic) electrization of any part of the gastric serosa, including the fundus, produces contractions, etc. Rabbits and dogs—with at the utmost one rabbit and one dog at his disposal!

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* v. Ziemssen. *Die Electricität in der Medizin*, 1887.

† Moritz. *Zeitschrift für Biologie*, vol. xxxii, p. 313.

2. The second point concerning which Einhorn professes to have found results opposite to those I have reported refers to my statement that when one electrode is applied to the mucosa and the other to the serosa, the faradization does not call forth a contraction. I wish to state beforehand that I do not lay too much stress upon this point, because it is neither of practical nor of great physiological importance. It is not of practical importance, because nobody has electrized a stomach for therapeutic purposes by applying one electrode directly on the serosa of the stomach; and it has no special physiological importance, as it is to a great extent contained already in the fact of the diminished responsiveness of the mucosa. We must also recur to some particulars of the later fact in order to understand the point in question. I have stated, in my paper, that a "strong current" (for instance, such current as is obtained when the secondary coil is at a distance of a hundred and twenty to a hundred and thirty millimetres from the primary), which produces a maximal contraction when both electrodes are applied to the serosa, does not have any effect upon the muscularis when both electrodes are applied to the mucosa. "Very strong" currents, however (like those of a distance of forty or fifty millimetres, and sometimes even of eighty or ninety millimetres), do often produce a contraction even when applied to the mucosa. I have then further stated briefly that even when one electrode is applied to the mucosa and the other to the serosa, a strong current does not produce a contraction unless both electrodes are within two centimetres' distance from each other. I did not dwell further upon this point; but it must be clear enough to every one that such a "very strong" current, which is sufficient to bring on a contraction even by having both electrodes on the mucosa, will certainly produce a contraction when one electrode is placed on the mucosa and the other on the serosa. Now, Einhorn, who professes to have found that the stomach contracts when stimulated by one electrode on the mucosa and the other on the serosa, has used a faradaic current of unknown strength. We are thus unable to determine whether his observations were in harmony with mine or not; the fact mentioned in his protocols, that a bipolar stimulation of the mucosa could produce contractions of the entire body of the animal, shows that Einhorn has stimulated with currents far stronger than even those which I term "very strong." By the way, in the small stomach of frogs, the animals which were mostly experimented upon by Einhorn, it is hardly possible to have the distance between the inner and the outer electrode greater than two centimetres—a distance within which I have stated that a contraction takes place even in dogs. Furthermore, these experiments, one electrode on the mucosa and the other on the serosa, I have made nearly exclusively on fasting dogs, the inner electrode being introduced into the stomach through the mouth, as in these experiments the stomach was never opened in order to exclude a possible circuit: mucosa + cut + serosa. In Einhorn's experiments, at least on the two rats, one rabbit, and the one dog, the inner electrode was introduced through an opening in the stomach. In the single experiment on the dog, the only one which could at least in some sense be compared with my experiments, Einhorn writes as follows: "The stomach is opened; one electrode is held at the gastric mucosa, the other at the serosa (fundus); a weak faradaic current produces a light peristaltic contraction." He, then, has not seen a local constriction, but a light peristaltic contraction. What I am speaking of in my paper is not a peristaltic but the local contraction, and I have stated expressly "that in studying the effects of a stimulation it is necessary to be aware of the accidentally passing by of a peristaltic movement, which might be mistaken for a local contraction."

Einhorn's contention, then, that when stimulating with one electrode on the mucosa and the other on the serosa he obtained results opposite to those reported by me, is utterly unfounded. He worked under uncontrollable and different conditions from those which were observed in my experiments, and has seen and been satisfied with other phenomena than those which I have described.

IV. A rather strange treatment was accorded by Dr. Einhorn to one other point in my paper: it is the often-mentioned fact that, when both electrodes were applied to the mucosa, even a strong current did not produce a contraction. Throughout my paper I consider this phenomenon to be the most striking observation in my experiments. In the mouth, pharynx, and œsophagus, even over the unstriated muscle fibres, a stimulation of the mucous membrane produces a contraction of the muscles beneath it without any difficulty. Even in the intestines the obstacle which the mucous membrane forms to the penetration of the current is small in comparison to that observed in the stomach. On the mucous membrane of the stomach, however, even on that part which spreads over the thick muscular wall of the pylorus, strong currents do not reach the muscular coat at all. This fact, so far as I know, was entirely new. In the entire paper I have not attempted to give any explanation of this phenomenon. I have spoken a few times of the "resistance" the mucosa offers to the penetration of the current, simply as a matter of convenience, to use a single word instead of a whole sentence; but have expressly added: "What the resistance means, what is its nature and extent, I should not attempt to answer for the present; it is reserved for a further study." Now Einhorn does not mention with one single word that I have observed such a new fact. He notes this fact in his experiments, he states it (by the way, in a wrong and very dilute form) in his *résumé*, but fails to state that this might be a confirmation of at least one of the facts which Meltzer professed to have observed. But what Einhorn does say in this respect is this: After counting up the two points where Meltzer simply misstated facts, Einhorn says: "3. The resistance of the gastric mucosa, according to Meltzer, is different from that of all other mucous membranes, being here very great"; this "third point is merely theoretically constructed, and, it appears to me, on a false basis." So, then, where Dr. Einhorn could not find fault with the fact itself, he omits to mention that I was the first to observe and state it, but instead he discovers that I have put up a theory which is, as it appears to him, false. Does Dr. Einhorn believe that if I had had a theory to put forward, I would not state it directly, but leave it to be implicitly understood by using a single word? And should not my express statement that I did not for the present wish to give any interpretation to the word resistance have protected me against the imputation of offering any theory? However, let us see why Einhorn finds my theory to be false. He says that Meltzer assumes "that the current *can not* penetrate the mucosa and reach the muscular layer." "It appears to me [Einhorn], however, much more probable and natural to presume that the gastric mucous membrane is a very good current conductor. But just for this reason the current will run merely to this membrane and not reach the muscularis. The electric current always takes the shortest path, the one which offers least resistance." Well, if the path *along the surface of the* mucous membrane offers the "least resistance," then the path *in the direction through the thickness of the membrane* will offer a "greater resistance"; that is all that I meant when speaking of the greater resistance of the mucosa. Where, then, is the contradiction between Einhorn's true and my false theory? It seems to me that either I do not understand Einhorn's point, or else Einhorn has neglected to analyze clearly the points under consideration. To repeat again, I simply wish to say that in the penetration in the direction of the thickness of the membrane toward the muscularis the current meets in the stomach with an unusual obstacle, a resistance. Whether this occurs on account of the exceptionally good conductivity of the surface of the mucous membrane of the stomach, while the conductivity in the direction of the thickness is the same in this membrane as it is in any other mucous membrane; or whether the conductivity of the surface of the mucosa of the stomach is the same as in any other mucous membranes, but the conductivity in the direction of the thickness is here abnormally less on account of some layers, glands, etc.; or whether the acid reaction has anything to do with the increased resistance; or whether this is on account of a peculiar arrangement of the submucosa, etc.—I do not wish at present to decide between or even to discuss all the possibilities. Although I already have some facts which might throw some light in a certain direction, they are not numerous and certain enough to decide this problem with a scientific probability; and I am not willing to follow the example of Dr. Einhorn in making general and positive statements after having made a hasty experiment on a single dog, or a single rabbit, or a single Morris S. By the way, I shall abstain from discussing the value of Einhorn's experiment with Morris S., as it does not purport to affect any of my statements. I have no desire to write here any other criticism than such as is necessary to refute Einhorn's attack upon my statements.

V. The avowed purpose of Dr. Einhorn's experiments and paper was to prove the efficacy of direct electrization as a therapeutic means, against which, according to Einhorn, I have written. Let us now examine exactly how far Einhorn has succeeded in his purpose. Let us even assume that his experiments have shown all that he wanted to show. He has, then, shown that my statement about the fundus is not true, and that my theory of the increased resistance of the mucous membrane is false. Well, these points have nothing to do with electrization as a therapeutic agent. But Einhorn has also shown my statement with regard to electrization with one electrode on the mucosa and the other on the serosa to be untrue. As there is no other refutation of any of my statements, it is probably on the strength of this latter contention that Einhorn draws the conclusion: "3. If one electrode is within the stomach, and the other applied to some other part of the body (leg, arm) which is not too far away from the stomach, a faradaic current of medium strength, lasting twenty to thirty seconds, produces peristaltic contractions of the stomach in addition to the part at which the outside electrode is held." Einhorn says here it produces peristaltic contractions of the stomach. In all the seventeen of Einhorn's experiments there is only one where it is mentioned that if one electrode is on the mucosa and the other on the serosa, the faradaic current produces a light peristaltic contraction (Experiment XVII), and that was in the often-mentioned single experiment on a dog; and, judging by the way the description reads, it would seem that there was altogether only one single stimulation. Here, again, Einhorn seems to generalize from a single experiment, or perhaps from a single stimulation! But leaving all these extremely weak points aside, Einhorn could not seriously mean to say that because stimulation with one electrode on the mucosa and the other on the serosa produces a contraction, this must also be true when the other electrode is placed on the skin of the body instead of on the serosa of the stomach? Why, altogether, has Einhorn avoided mentioning that point of my experiment which has a direct bearing on the question at issue? I have stated that when one electrode is on the stomach and the other on the skin near the stomach, this organ remains perfectly motionless, and I have shown even more, that under these circumstances there is not a current on the serosa of the stomach sufficient to stimulate even the sciatic nerve. Now, if any of my statements can be interpreted as being against faradization as a therapeutic measure, it is surely the one I have just recorded. Why, then, has Einhorn not mentioned it, and why did he not repeat just these experiments, if he intended to refute the main damaging contention of mine?

But there is still a greater surprise in store. Though Einhorn has avoided mentioning that I have made such experiments, and though he does not say that he made such experiments, he made them nevertheless, but with what a result! Here they are: "Experiment I.—Frog: One electrode is introduced through the mouth into the stomach . . . ; if the outer electrode is placed on any part of the body (leg or abdominal wall), then the faradaic current produces contractions of the body, while there is apparently nothing visible with regard to the stomach." "Experiment XV.—Frog: Abdomen opened; one rubber electrode within the stomach. . . . If the stomach is covered with the abdominal wall, and the other electrode applied at the skin, the faradaic current produces either no contraction whatever of the stomach, or a slight one; while there are always contractions of the abdominal muscles." In these two experiments, Einhorn has seen distinctly that, when one electrode is within the stomach and the other on the abdominal wall, the faradaic current does not bring on a contraction of the stomach, and this even in such short distances as exist in frogs! Nevertheless, Einhorn calmly draws his above-quoted exactly opposite conclusion: "3. If one electrode is within the stomach and the other applied to some part of the body . . . a faradaic current of medium strength . . . produces peristaltic contractions of the stomach in addition to the contractions of the part at which the outside electrode is held"! Further comment is surely not required.

VI. Dr. Einhorn was carried away in his, to say the least, very hasty work by his zeal to defend direct faradization as a therapeutic measure. But what made him assume that I had attacked it? I only stated that direct and cutaneous faradization did not produce a contraction of the stomach in the animals I had experimented with. I did not say that the same conditions must prevail in human beings, and I did not deny that faradization could produce other useful effects besides contractions of the stomach. And why was Dr. Einhorn more annoyed by my statements than by the statements of those who went even further than I did. Moritz,* for instance, has found that direct faradization, the inner electrode being in the fundus or in the pyloric part, does not cause any contraction of the human stomach, as judged by the change in the "internal pressure" of the stomach. And Goldschmidt † goes so far as to state that neither the faradaic nor the galvanic current has either a motor or a secretory effect; the latter point in direct contradiction to the statement of Einhorn, to whose figures Goldschmidt does not attach much importance.

This Goldschmidt states in the "physiological part" of his article; in the "clinical part" he simply reports a number of stomach cases which were improved by treatment with electricity, and confesses that he is unable to offer any explanation of the therapeutic results. Why was Dr. Einhorn not charitable enough to assume that I might hold a similar position to that of Goldschmidt? He would have saved himself and me the trouble and the annoyance of a perfectly superfluous controversy.

VII. Dr. Einhorn, in his article, has simply stated that the results which he found in his experiments were in contrast to those stated by me, leaving to the reader the choice between my ability or my veracity, as to which should be held responsible for my statements. Were I myself to have the selection, I should decidedly prefer to have my ability doubted than my veracity. Applying the same rule to Dr. Einhorn, I have so far avoided supporting my statements by reference to competent men of science who witnessed my experiments, and who can testify in behalf of the truthfulness of my statements, thus leaving Dr. Einhorn in a similar dilemma, or rather in a worse one than he chose to put me in. However, there will yet remain some readers, especially those whose clear judgment is biased by the same motives which misled Einhorn, who will not be convinced by my arguments. For the benefit of such readers, and in justice to myself, I wish to make the following personal statements:

My work was done in the physiological laboratory of the College of Physicians and Surgeons in the winter of 1894–'95. I was then working on the problem of the effect of the vagus upon the contractions of the stomach. In the course of this research I came to stimulate the stomach directly with the faradaic current, and then made the surprising observations under discussion. I worked out these observations systematically on many animals. I had no practical object whatsoever in view while pursuing this study, and certainly did not think of interfering with any one's therapeutic preferences. I wish to say in my own behalf that, though being myself a practitioner and intensely interested in the proper advancement of practical medicine, I make it a point never to permit any practical considerations to enter into the selection and pursuit of a purely scientific, a physiological, or a biological problem. I have two reasons for it: one is a personal one—it is my inclination; the other is founded in my firm belief that one arrives, in the solution of a problem, much nearer the truth the less his judgment is biased by practical motives, and that an unbiased truth will be of more practical service than one discovered to order.

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* *Loc. cit.*

† *Deutsch. Archiv für klinische Medizin*, vol. lvi, p. 295.

I have often called upon my friends in the laboratory to witness the phenomena, to confirm or to contradict, and to discuss their meaning. In the course of this winter, too, I have again taken up the same line of experiments, which have often been witnessed by the members of the laboratory staff. I am permitted to refer to Professor F. S. Lee and Dr. R. H. Cunningham, who have often seen my experiments and can confirm my statements of experimental fact. Furthermore, I demonstrated the main facts under discussion to the members of the American Physiological Society, in the physiological laboratory of the Harvard Medical School, Boston, on December 29, 1896 (see *Science*, January 29, 1897).

Possibly the question will not yet be settled for Dr. Einhorn, and he will be inclined to continue the discussion much longer. In order not to waste his and my time, I make the following proposition: I will leave it to Dr. Einhorn to select a few men of science who are capable of passing judgment upon the question under discussion, and I am ready to experiment in their presence. If I fail to sustain my statements, they can say so; if I succeed, they shall state so. This will settle the scientific dispute. Unless Dr. Einhorn complies with this proposition I shall consider my discussion with him on this issue as closed.

VIII. I have above mentioned that I have lately again taken up the study of the contractility of the stomach. In close connection with the foregoing I wish to append here briefly a few of the results I have so far obtained, and of which I have already given a short account at the above-mentioned annual meeting of the American Physiological Society.

In all the dogs I have so far experimented with, a stimulation of the peripheral end of the pneumogastric nerves caused a distinct contraction of the stomach. In one dog this effect was obtained only by the stimulation of the left, and in another only from the right nerve. Usually the effect can be obtained from both nerves, though there are nearly always some differences. For instance, a stronger current is sometimes required for one nerve than for the other in order to produce an effect; or the effect is stronger from one than from the other. The weakest effective current shows sometimes during stimulation a very moderate peristaltic movement of the stomach, sometimes the effect is not seen until the stimulation is discontinued—after-effect. Strong stimulation does not cause a peristalsis, but a simultaneous contraction of an entire part of the stomach. The contraction is the stronger the stronger the current is and the longer the stimulation lasts. However, the contraction seems always to attain its maximum only after the cessation of the stimulation. This fact is highly interesting, but has not yet been studied well enough to dwell upon it here any longer.

The fact to which I wish especially to direct attention is this:

No matter whether the right vagus or the left, or both vagi were stimulated, the contraction was always confined to the right part of the stomach. The stronger the stimulation and the longer it lasted the larger was the part which became involved in the contraction; but always quite a large part of the left side of the stomach remained unaffected by the contraction, except that it received the gas from the contracted part. We should not dwell here upon further particulars of this phenomenon.

While having the stomach of a fasting or fed animal under observation I have often enough seen spontaneous peristaltic waves passing over the stomach. But since my attention was directed to the difference between the right and the left part of the stomach I have never seen a distinct peristaltic movement passing over the outer end of the left side of the stomach. Whether a movement started in the fundus and traveled toward the pylorus, or started in the pylorus and traveled toward the left, the contraction was always stronger at the pylorus, and gradually lost its intensity (and duration) while traveling toward the left, until it reached about the outer third, when the contraction ceased to be distinct and easily recognizable.

The very same description fits exactly to the very lively peristaltic movements which sometimes take place when asphyxia sets in. The outer end of the left part of the stomach does not seem to take part in the lively commotion.

I have often caused purposely, as well as involuntarily, the starting of a peristaltic wave by a mechanical stimulus. It was always confined to the bulk of the right part. I never could cause the starting of a peristaltic motion by stimulating the outer end of the left part of the stomach. The same applies to thermal and chemical stimuli. With electrical stimulation (faradaic) I have, so far, rarely succeeded in causing a plain peristaltic movement. When it did happen, it was caused by only a very light stimulus, and was confined to the outer end of the pyloric part. However, nearly every strong local contraction caused by an adequate faradaic stimulus winds up with a moderate peristaltic wave.

I have studied again, and in greater detail, the difference in the behavior between the right and the left part of the stomach, with regard to the local effect of direct stimulation with the faradaic current. The following short statement is derived from my present experiences. We might consider the contractility of the stomach, with regard to faradaic stimulation, as having a negative and a positive pole. The outer end of the fundus represents the negative, and the pylorus the positive pole. There is generally a gradual transition between the two poles. In all the animals (dogs) which I have so far examined there was at the outer end of the fundus an area where no distinct contraction could be produced by any current, no matter how strong. In two cases there was a slight shriveling confined to the part next to the electrodes and to the uppermost layer of the muscularis. On moving the electrodes more toward the right end of the stomach, the local contraction became more and more distinct, and it reached its maximum at the pylorus. The place where the first distinct contraction can be produced rests largely upon the strength of the currents; the stronger the current the farther to the left is the first distinct contraction obtainable. A current of medium strength (about a hundred and thirty millimetres' distance of the secondary from the primary coil on a Du Bois-Reymond inductorium) produces distinct contractions only in the pyloric part.

All these experiments are full of important practical consequences, which, however, I do not intend to draw attention to for the present. Availing myself of this opportunity, I wish to express my gratitude to Professor John G. Curtis, the director of the physiological laboratory of the College of Physicians and Surgeons, for the courtesy shown me by affording to me, now for many years, the rare opportunity of pursuing some original researches in this progressively equipped laboratory. I wish also to thank my friend Professor F. S. Lee for the constant interest he has taken in the various researches I have there pursued, and for the many valuable suggestions on and discussion of the problems involved in these researches.

A NEW TREATMENT FOR SINUS TRACTS IN THE ABDOMINAL WALL DUE TO INFECTED LIGATURES FOLLOWING INTRAPERITONEAL OPERATIONS.

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The occurrence of sinus tracts in the abdominal wall, following intraperitoneal operations, has been met with from time to time by all operators. This has been especially the case in operations requiring the use of drainage. Under these circumstances the ligatures left within the abdomen or pelvis may become infected, and later on a sinus develops, which remains open indefinitely, or at least until Nature gets rid of the foreign material or an opening is made by the surgeon down to the bottom of the sinus and the ligature removed. In the former instance a long time intervenes before Nature effects a cure, while in the latter case patients are obliged to submit to an operation which not only confines them to their homes or hospital for several weeks, but is likely to so weaken the abdominal cicatrix that a hernia is apt to develop subsequently. Again, in some cases it is necessary to open the abdominal cavity to reach the infected ligature and cure the sinus, thus endangering the life of the patient.

Realizing, therefore, the inconvenience to a patient of these sinuses, and the indefinite time they remain open if left to Nature, as well as the difficulties and in some cases the dangers attending an operation, it was a great satisfaction to me to learn how to cure them quickly without the use of the knife or making it necessary to confine the patient to the house or hospital. In fact, the method of treatment is so simple that it may be carried out in the private office of the surgeon.

I am indebted to my friend Dr. A. E. Spohn, of Corpus Christi, Texas, for my knowledge of this method of treating these sinuses. Although it has been at least two years ago since he mentioned the subject to me, it was only quite recently that I tried the method in two cases with success.

In the first case an infected ligature was removed from a sinus following an operation for appendicitis. The original operation required the use of glass drainage. Only one ligature was used, which was placed around the stump of the appendix. The drainage sinus contracted after the tube was removed, but refused to heal and remained open for ten months, when the infected ligature was easily extracted by the loops of silkworm gut. The sinus closed in one week. The second case was a sinus following an operation for pyosalpinx. The original operation required the use of glass drainage. Twelve months after the operation the sinus was still open and showed no tendency to heal. The infected ligature was readily removed with the silkworm-gut loops, and the sinus closed in eight days.

A glance at Fig. 1 will give a correct idea of the instrument employed for the cure of these sinuses. It is very simple and easily made. A rounded piece of wood, a quarter of an inch in diameter and four inches long, serves as a handle, to which silkworm gut is so attached by heavy thread or string that free loops are left.

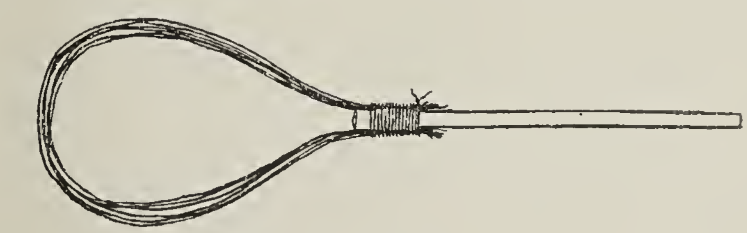

Fig. 1.

It is necessary to have the wooden handle rounded so that it may be easily rolled between the thumb and index finger. There should be from four to six free loops of silkworm gut. Thick hair from the tail of a horse will answer the purpose quite as well as the silkworm gut.

Before introducing the silkworm gut into the sinus the ends of the loops should be pressed together so as to make the strands lie closely and thus facilitate their introduction. The free loops are now passed into the sinus and gradually pushed along until the bottom is reached. The handle is now rolled between the thumb and index finger. This movement is communicated to the silkworm gut, and the strands becoming twisted entangle the infected ligature in their loops. The handle is held firmly so as to prevent untwisting and the silkworm gut withdrawn slowly from the sinus, when the infected ligature will be found ensnared in the loops if the manipulation has been successful; if it has not, the process is repeated until the foreign material is caught.

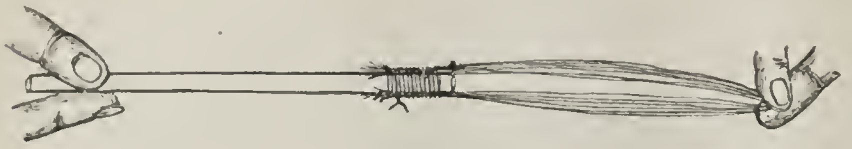

Fig. 2.

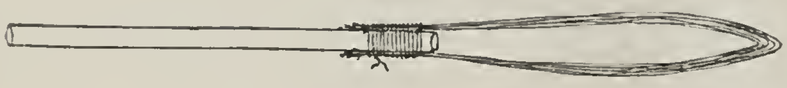

Fig. 3.

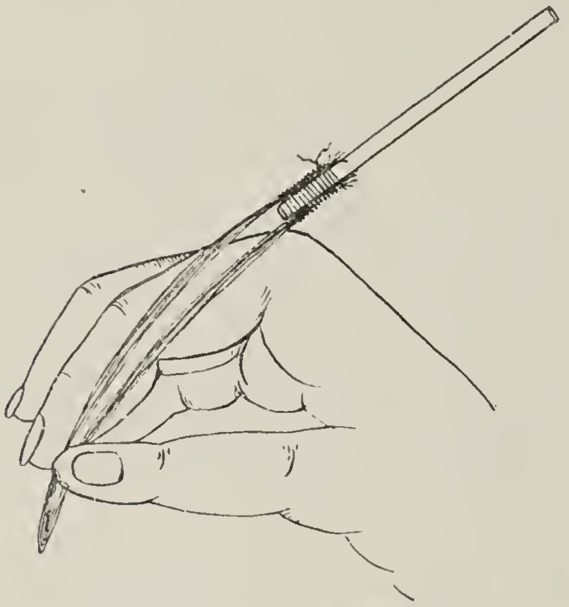

Fig. 4.—The method of introducing the silkworm-gut loops into the sinus.

The sensation conveyed to the fingers of the surgeon when the infected ligature is ensnared is characteristic and easily recognized after a little practice. When the loops have been twisted a slight pull will be sufficient to inform the surgeon whether or not the ligature has been caught. If it is caught there is felt a decided sense of resistance on attempting to withdraw the silkworm gut. If this resistance is not felt the loops should not be withdrawn, but allowed to untwist themselves and again twisted by rolling the handle between the thumb and index finger after being pushed to the bottom of the sinus.

The silkworm gut being flexible, and at the same time sufficiently stiff, it will follow even a tortuous sinus with the greatest ease, provided care and skill are used in the manipulations.

It is necessary, before attaching the strands of silkworm gut to the wooden handle, to explore the sinus with a flexible probe to determine its length, so as to know how long to make the loops in a given case. If they are too short and do not reach to the bottom of the sinus, the ligature will not be ensnared; if, on the other hand, they are too long, the instrument is difficult to manipulate, as there should not be more than one inch of free silkworm gut between the opening of the sinus and the end of the wooden handle. Again, the preliminary use of a flexible probe gives us the direction the sinus takes, which aids, of course, materially in the introduction of the loops.

The simplicity of the detail and the success of this method recommend it to the profession as being of the greatest benefit not only to the surgeon but to the patient as well. Thus, infected ligature tracts may be cured before the patient is discharged by the surgeon, as the separation of the ligature from its original attachments is sufficiently accomplished at the end of two or three weeks to permit of its removal with this little instrument. This is certainly much better than leaving the case to Nature, which means failure in most instances, and in all cases great inconvenience to the patient for a period of several months, during which time the reputation of the surgeon suffers more or less.

In cases where an abdominal incision has been closed with buried sutures of silk, silver, or silkworm gut and a sinus results from these sutures, this method will not be applicable, as there is, of course, no separation; consequently the sutures are held permanently by the fascia.

2011 Walnut Street.

A CONTRIBUTION TO THE STUDY AND CLASSIFICATION OF MALARIAL FEVERS IN THE DISTRICT OF COLUMBIA.*

By WILLIAM B. FRENCH, M. D.,
WASHINGTON, D. C.

On August 22, 1896, the hygienic laboratory of the Marine-Hospital Service instituted a study of the character and origin of the malarial fevers in the District, with special reference to the prevalence of these fevers and the distribution of the various forms of infection, this work being preliminary to the study and classification of the several fevers incident to the southern portion of the United States.

The investigation was conducted mainly at the Washington Asylum Hospital, and two months later was continued at the Government Hospital for the Insane. The former is in the extreme eastern section of the city on the banks of the Anacostia River, a branch of the Potomac, and not more than fifteen or twenty feet above the surface of very extensive fresh-water marshes; the last-named institution is near the mouth of the Anacostia, about two hundred feet above it, and a quarter of a mile back from the river shore.

The Asylum Hospital obtains its water for all purposes from the city pipes, while the Hospital for the Insane is supplied with drinking water, and that used for tea and coffee, from flowing springs that come from the same sand and gravel vein about forty feet below the surface of the plateau on which the hospital stands. There are several of these springs within an area of a mile, from two of which the main supply is taken. The analysis shows them all to be of remarkable purity and free from organic and albuminoid substances. The main water supply for general purposes is obtained from tubular wells that draw their supply from a coarse gravel bed of unknown thickness, but more or less mixed with clay, at a depth of three to four hundred feet below tide water. The drill to reach this passes through first about thirty feet of loam and sediment deposit of the river basin, then over three hundred feet of clay with two or three deposits of sand and gravel, but not yielding sufficient water to be available for general use. Over two hundred thousand gallons are daily taken from the lower gravel bed by the action of compressed air. At night, as there is considerable consumption of water for water-closets throughout the establishment, and also for steam heating and other mechanical purposes, and it is not practicable to run the air lift for this, water is taken from the Potomac River. While, as the tank only holds ten thousand gallons, most of this river water runs away before morning, it doubtless now and then occurs that some remains and may be used for washing by the inmates in the morning, and as an insane person may drink from any running water it is possible that occasionally they may take a drink of it. The attendants never drink this water, but as the same tank is filled in the morning from the artesian wells and used for bathing, etc., during the day, there is a varying amount of river water mixed with it. If it is possible for the organism in question to be absorbed by the skin, then it seems probable that the water in this instance is a means of conveyance. The toothbrush would also enter into the question to some extent as a carrier of malaria-bearing water.

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* Read before the Medical Society of the District of Columbia, April 7, 1897.

In attempting to trace the source of infection at St. Elizabeth, the water supply can not be definitely excluded. So long as the artesian and river waters are mixed to any extent, it is quite possible for the latter to infect any one who bathes in it.

The Washington Asylum water supply is free from local contamination at least, and would support the theory of aerial dissemination of the poison, but until we know to a certainty the life of the malarial organism outside of the human body, the question is likely to remain an unsettled one.

The origin of the malarial germ or organism is, no doubt, in the expanse of fresh-water marsh close by, with its immense area of decomposing vegetable growth. There is no question about the quantity of malarial poison existing at the Asylum Hospital; its exact means of dissemination, however, is a matter for some speculation.

A residence at the Washington Asylum Hospital, even for a comparatively short time, is an almost certain guarantee of "chills and fever" for patients and attendants alike.

The same state of affairs exists at the Government Hospital for the Insane, as regards infection, though to a less extent.

During the late summer and early fall months, at the Washington Asylum, in the almshouse, workhouse, and old men's home, all adjoining, the consumption of quinine is enormous. Sixty ounces were used in one month alone. In the old men's home it is the almost daily custom for a few of the inmates to take five-grain capsules of quinine when their chill comes on. Indeed, so frequent are the attacks that the victims are not accustomed to report their trouble to the doctor, but apply to and receive from the colored man in charge of the two wards what he may deem necessary. Most of these old negroes have been in this part of the hospital for many years. They are generally able to totter about with the aid of canes, are more or less crippled with chronic rheumatism and old age, and spend their days sitting about in the sun and dozing. This pastime is varied with frequent attacks of chills and fever, which they break up temporarily with a few days' dosing with quinine. The medicine is dispensed with as soon as they feel better—only to be required again a little later, as the same infection manifests itself anew.

In illustration of this fact, a colored man from the old men's home was found making a friendly visit to a patient in the hospital proper, a quarter of a mile distant. When asked if he had had chills lately, he replied that he had had one twenty minutes ago—that he felt only "tolerable" just now. His temperature was taken and found to be 105.4° and pulse 124, yet he was making a social call, and seemed quite indifferent to a temperature which would have discouraged social duties in most of us. This man's blood showed the combined infections, tertian and crescentic bodies. He had taken quinine at irregular intervals for three months, and had had "fevers" at odd times during that period. He was from Virginia originally, and had been in the northwest section of this city for five years, and at the hospital for eight months. His first chill occurred three months before the incident mentioned.

The character of the patients at the two institutions differs in that at the Asylum Hospital they are generally transient, except those in the old men's home, while at St. Elizabeth they are more or less permanent, some having been residents as long as twenty years or more.

In some cases it could be fairly well determined that infection occurred after a brief stay at one or the other institution, but generally it was found almost impossible to secure reliable histories. At one institution the patients were ignorant and unobserving, and at the other they were insane in various degrees, so that objective symptoms alone had to be depended upon, or personal observation. For the same reasons it was found impracticable to sharply classify the several varieties of infection by means of their histories, nor could the percentage of infected cases to the total number of patients be determined, because the observer could not be present daily.

One hundred and five cases of known and suspected infection were examined, the ages of the patients ranging from one year to eighty-seven years, and in ninety-four the organism was found. In six cases pigmented leucocytes only and free pigment were found, and in five cases the result was negative. About twenty additional cases were examined with negative results, but, as the time of the examiner on some days was very limited, they have been excluded as not fair tests of the method.

A number of interesting conditions were seen in the blood at times. Phagocytosis was not uncommon. A few segmenting forms were met with, but more often their pigment clumps were found free or in the leucocytes. In a few instances, two and three, and in one case four ringlike forms were seen in one red cell.

In all cases the blood was drawn from the lobe of the ear and used in its fresh state.

As a matter of choice it is preferable to examine before the patient is cinchonized, but as the æstivo-autumnal organism was found once after fifty grains of quinine had been taken in thirty-six hours, preceded by twenty grains daily for two or three days, it is not necessary nor fair to withhold the drug pending an examination.

From the histories obtainable at the Washington Asylum, it seemed impossible to make any kind of a classification of cases by districts. Patients in many instances have moved about from place to place within the city, and even away from it, and returned. They could give no reliable account of themselves. Dates and time meant nothing to most of them. Nor could it be told whether their present attack was the first. Their manner of expressing themselves generally left a doubt as to the truthfulness of their statements. They were more like a lot of children than adults.

Forty-nine cases of æstivo-autumnal, forty cases of tertian, and three cases of combined infection were met with, and two cases of æstivo-autumnal fever complicated pulmonary tuberculosis.

Without figures to support the statement, but from a somewhat extensive experience with the disease under consideration, it has appeared to the observer that the black man is quite as susceptible to infection as the white. The disease, so far as could be observed, is as severe in its manifestations in the negro as in the white man. Generally speaking, the negro, owing to his lower state of civilization, bears the hardships of sickness with less complaint than his white neighbors, and for that reason may appear to suffer less under similar conditions.

The total number of cases were distributed as follows:

At the Washington Asylum, tertian infections	21
At the Washington Asylum, æstivo-autumnal	34
At the Washington Asylum, combined infections	3
Government Hospital for the Insane, tertian infections	20
Government Hospital for the Insane, æstivo-autumnal	16
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It should be stated in connection with these figures that they do not include all cases of malarial infection, because the work was not carried on daily, nor during the entire twenty-four hours of any one day. Occasionally the observations were suspended for several days at a time.

Seventy white and twenty-four colored people were found infected, divided as follows: White, æstivo-autumnal, 34; colored, æstivo-autumnal, 16; white, tertian, 34; colored, tertian, 7; double infection, white, 1; double infection, colored, 2.

The ages of the patients examined were:

1 year old	1
2 years old	1
10 to 15 years	2
15 to 20 years	5
20 to 30 years	7
30 to 40 years	22
40 to 50 years	11
50 to 60 years	16
60 to 70 years	17
70 to 80 years	8
80 to 87 years	4
	94

A study of this table, where the extremes of life are represented—a baby of one year and four men of eighty to eighty-seven years—would seem to show that no age is exempt from the disease in question. The observer's experience in the preceding year bears out this statement fully, especially as to children and babies. Many cases of infection in nursing infants were found in a series of dispensary cases examined a year or more ago, and one instance of a combined infection with a semicomatose state, in addition to the one reported in this series.

Mixed Infections.—It is desired to call special attention to the two cases of pulmonary tuberculosis, complicated by the presence of malarial infection. In quite a large number of blood examinations these are the first two cases of the kind that the observer has met. In the six hundred and more cases studied by Dr. Thayer and Dr. Hewetson, of the Johns Hopkins Hospital, malarial infection of tuberculous patients is not mentioned. It is readily seen how confusing to the physician and how troublesome to the patients such a condition of affairs would be, and that in all probability the tuberculosis would be suspected, for a time at least, as the cause of the chills and fever. The diagnosis in such cases would have, too, a very material bearing on treatment—in one case quinine and plenty of it; in the other, the remedies thought best for the condition of the lungs would be indicated.

The blood showed crescents and free pigment blocks in one, and ringlike bodies in the other. Tubercle bacilli were found in the sputum of each. It would have been very instructive to have followed out the effect of the malarial complication of tuberculosis, but in the absence of detailed temperature charts and histories it could not be done.

The combined infections, of which there were three, deserve mention. In two the symptoms were clearly those of the tertian organism, which largely predominated; in another, a baby of twenty-two months, the first infection was with the tertian parasite. Quinine was given and the symptoms disappeared for about two weeks, when they returned and quinine was again given with good results. About three weeks later the child was seized with convulsions and on the following day its blood showed flagellate bodies, a great number of half-grown tertians, and large extracellular bodies, some in process of budding, and fourteen crescents and one ringlike form in a small cover-slip preparation. Quinine was given, and the next day the various forms were less numerous. Under further treatment the baby had had no return of trouble eight days later when the work closed at the Asylum Hospital. As showing the possibilities in diagnosis, it was suggested that the baby "had worms" when the convulsions occurred, but a glance at the blood was convincing.

Another case of some interest was that of a white man of sixty-nine years, a carpenter, a native of the southeastern part of this city, whose previous health he said had been good. Three weeks prior to the occasion about to be related he entered the hospital for treatment of a diarrhœa of a year's standing, and was discharged cured after a short stay in the hospital, but promptly returned with the same trouble, and a week later the note of the case reads: "Has had quinine sulphate, five grains, three times a day for six days. No chills. No temperatures taken. Very sallow and anæmic, emaciated, and seems in much general distress." A blood examination was suggested by the general appearance of the patient, and showed numerous pigmented leucocytes, crescents, ovoids, intracellular ringlike forms, flagellate bodies, frequent instances of two ringlike forms in one corpuscle, and phagocytosis of flagellate body in active motion. Death occurred ten hours after the examination mentioned, and the autopsy showed "heart small and almost enveloped in fat. Lungs pigmented, but normal. Liver normal in size and appearance. Spleen small, soft, and friable. Kidneys normal in size and general appearance, except for several small superficial watery cysts on surface of one of them." It was not practicable to examine the brain. A few hours before death the rectal temperature was 95.6°, pulse 84, and small and weak. This was undoubtedly a death from malarial poisoning, a rather more rare occurrence than generally supposed, in this region at least.

Perhaps the majority of the cases studied would have been readily recognized as malarial, but in the doubtful cases the diagnosis was dependent upon the blood examination. This was particularly true of the baby in convulsions from a combined infection, æstivo-autumnal and tertian; of the two cases of tuberculosis where the former type of infection was found; and in the case of the man of sixty-nine years just mentioned.

It is safe to say that a positive diagnosis can be made in ninety-five per cent. of cases without the expenditure of undue time. The satisfaction of feeling sure of your case is well worth the labor required.

No cases of quartan infection were discovered, nor were there any cases of combined malarial and typhoid infection.

Every courtesy was shown the observer by the officers of the two hospitals named.

Inasmuch as the method of making preparations of blood suitable for immediate examination without staining seems to be understood by a few only, and requires the very careful observance of some simple rules and a little practice, it may be stated as a first requisite that the glass slides and cover slips *must be clean*, and if slightly warm, say body temperature, so much the better, the blood will spread more readily. To secure absolute cleanliness of the slides, after they have been soaked in pure nitric acid for a day or two, washed in clean water, in ninety-five per cent. alcohol, and dried on a clean towel, they should be washed in absolute alcohol, and the flat surfaces not touched by the fingers in handling. This last precaution is very essential, otherwise an oily film is deposited which prevents the proper spreading of the blood. The cover slips are cleaned by boiling about two hours in battery fluid, rinsing in distilled water, in ninety-five per cent. alcohol, and then in absolute alcohol, after which they are spread out, preferably in the sun, to dry. These slips also should not be touched by the fingers on their flat surfaces, otherwise they are spoiled for blood work.

Of course, in emergencies, it is practicable to prepare a few slides by using a perfectly clean handkerchief to dry a slide previously washed in clean water and alcohol, though the preparation is very likely to be a poor one, and unsatisfactory to examine. The cover slips may be breathed on and dried in the same way, but can not be depended upon, and if from necessity this method has to be used, it is safer to make four to six cover slips, two on a slide, and even then failure may be the result. Perfect cleanliness of slides and slips is of the utmost consequence, and can not be insisted upon too strongly, especially for the beginner. There is a certain dexterity which comes with practice that later enables one to take some liberties with this rule, but until the technique is acquired it is not safe to depart from it.

The cover slips and slides may be carried dry. Sometimes the former are kept immersed in equal parts of alcohol and ether, and dried at the time of using, but it is not necessary to do so. Enough slips for a dozen or more preparations may be carried in an ordinary pill box, and if the slides are wrapped in clean paper the whole outfit occupies very little room. It is entirely practicable for the general practitioner to be prepared to make preparations at any time, and by a method which the writer has devised, and which may have occurred to others; the glass slides may be dispensed with at the bedside, and only the cover slips used, which materially lessens the demand on pocket space. One of the frequent objections heard to this method of diagnosis is that so many articles have to be carried by a physician that it is impossible to load the pockets with more. As said before, a pill box, better if made of tin, an inch or an inch and a quarter in diameter, and a quarter of an inch thick, containing the slips and a flat needle, is all that is required, and certainly no objection can be offered to that on the score of size.

To secure the blood, first wash and dry the lobe of the ear with the corner of a wet towel. Lay out the cover slips and slides within easy reach. Pinch up a small portion of the lobe between the finger and thumb, and make the skin rather tense, and while so holding it puncture slightly with the needle. The puncture will then bleed at any time for an hour or more if squeezed. Now wrap a fold of the dry towel around the middle finger, and hold the cover slip by its edges between the index finger and thumb of the same hand, and pinch very lightly the lobe of the punctured ear between a finger of the other hand and the towel-wrapped finger; a small drop of blood will flow; this should be wiped away, and a second and third drop treated in the same manner, so as to secure the blood from some little depth. The fourth drop may then be touched on its top only by the cover slip, the towel dropped from the finger, and the slip quickly placed drop downward on the slide. The blood should then spread evenly beneath the slip, and the corpuscles will be found lying flat and apart from each other. The whole process only requires a minute or two, and is not nearly so troublesome as reading a description of it. If it is desired to examine the slides at once, this is all that is needed; otherwise the edges of the cover slip must be sealed with paraffin melted on the blade of a penknife, or in cold weather vaseline may be used, though it is apt to get between the two glasses. Slides thus sealed will generally keep for several hours—three or four—sometimes much longer.

Another method, the one referred to as dispensing with the slides, is to substitute a cover slip for the slide—in other words, secure the drop of blood as described, and immediately place upon it another cover slip, when the blood will spread very readily. These two slips, glued together by the intervening blood, may be later laid upon a drop of immersion oil on a slide, allowed to flatten the oil out by their own weight, and examined in the usual way. They can not be sealed, however. Pressure on the slips will probably spoil the specimen by distorting the corpuscles and huddling them together.

To make slips for staining, obtain the drop of blood as heretofore described; lay upon it a cover slip, and allow the blood to spread, then separate the two slips by sliding them apart. Lay them blood side up until dry, when they are ready for fixing and staining. It is generally well to prepare two to four slips in this way in general practice, as our intention of examining the fresh specimen is often spoiled by interruptions. Or, draw the edge of a cover slip across the drop of blood, and then draw the same edge over the surface of a second slip. Several slips may be made in this way from the first slip, if the work is quickly done.

There are some don'ts that it is well to remember in making specimens for examination in the fresh state or for staining.

Don't handle the slides and slips by their flat surfaces.

Don't make pressure on the slips after they have been laid upon the slides or upon each other. If the blood does not spread, the slide is not clean—make a new one.

Don't take a large drop of blood; one of the size of an average pinhead is ample; more than that is apt to make the specimen too thick.

Don't touch the ear with the slip, or it will be very likely to become greasy.

Don't squeeze the ear hard. Make a puncture that will bleed with very little pressure.

The lobe of the ear as a source of blood supply has some advantages over the tip of the finger. It is not nearly so sensitive. Indeed, most patients do not know that the lobe has been punctured until told, and a nursing baby rarely interrupts its occupation on account of the needle. It is out of sight of the patient—a decided gain in those to whom a drop of blood is sufficient cause for fainting. It is less likely than the finger to be infected, and will bleed, as occasion requires, for a longer time, without a new puncture.

506 East Capitol Street.

THE PRACTICAL APPLICATION OF THE SERUM DIAGNOSIS OF TYPHOID FEVER.*

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The serum test for determining the presence of typhoid fever has received a great deal of attention during the past few months.

It is not necessary for me to review the literature on this subject. Suffice it to say that to Widal belongs the credit of its introduction. At the same time Dr. Wyatt Johnston, of Montreal, by his practical suggestions, has done much to popularize this test with the medical profession.

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* Read before the Minnesota Academy of Medicine, January 6, 1897.

The action of the Quebec and of the New York city boards of health in supplying laboratory facilities for the examination of the blood of suspected typhoid fever cases is to be commended, and their example should be followed by other boards of health throughout the country.

I have to report to-night the results from sixty-seven examinations of blood specimens which have been made during the past two months at the bacteriological laboratory of the State Board of Health of Minnesota by Professor F. F. Wesbrook and the assistant bacteriologist, Dr. L. B. Wilson, demonstrating the importance of this test in the diagnosis of typhoid fever.

Case I.—With this case were symptoms which closely resembled those of typhoid fever. The clinical diagnosis was made accordingly. The serum test was used, however, and the absence of the characteristic reaction from this test threw doubt upon the clinical diagnosis. More careful inquiry into the history of the case developed the fact that a few days previous to the appearance of the typhoid symptoms the patient had had his nose cauterized. The diagnosis was now changed to that of sepsis, and this was demonstrated by the subsequent history of the case to be the correct diagnosis.

Case V.—A specimen of blood was sent to the bacteriological laboratory for examination as an aid to diagnosis. The absence of the serum reaction made the existence of typhoid fever doubtful. No full history could be obtained of this case, but the statement was made that the later symptoms did not bear out the first impression as to the presence of typhoid fever. Thus the laboratory diagnosis strengthened the clinical diagnosis.

Case XXI.—The clinical diagnosis in this case was typhoid fever. The disease was mild in character and of short duration. The attending physician classed it among the cases of aborted or cured typhoid fever, and emphasized his ability to treat such cases successfully by remarking that he had had four such cases of typhoid fever during the fall. The history of this case, briefly, is as follows: At the outset there were symptoms closely resembling those of the early stage of typhoid fever—a coated tongue, pain, abdominal tenderness, an elevation of temperature, etc.—but these symptoms quickly subsided. After but a few days' illness the patient was placed in a hospital. During her stay of one week in the hospital her temperature was normal. A specimen of blood examined gave no serum reaction. The diagnosis of typhoid fever was undoubtedly wrong.

Case XXII.—Here, again, is a case that might be classed with aborted or cured typhoid fever. Unfortunately, however, for any such position, repeated serum tests gave no reaction. The typhoid symptoms quickly subsided, the temperature became normal, and the patient made a rapid recovery. The diagnosis of typhoid fever was promptly abandoned by her attending physician.

Case XXXVIII.—When first seen, this patient had a temperature of 103° F., and other symptoms of typhoid fever. The serum test gave no reaction, however, and the subsequent clinical history did not favor the diagnosis of typhoid fever.

Case number.	Laboratory exam. No.	Day of the disease.	Serum reaction.	Clinical diagnosis.	Remarks.
I.	1	8	No.	Sepsis.	
II.	2	..	Yes.	Typhoid fever.	
III.	3	..	Yes.	Typhoid fever.	
	28	..	Yes.		
IV.	4	8	Yes.	Typhoid fever.	Reaction very marked and rapid.
V.	5	3	No.	?	Not typhoid fever.
VI.	6	42	Yes.	Typhoid fever.	
VII.	7	35	Yes.	Typhoid fever.	
	64	94	Yes.		
VIII.	8	42	Yes.	Typhoid fever.	
IX.	9	30	Yes.	Typhoid fever.	
X.	10	25	Yes.	Typhoid fever.	
XI.	11	2	No.	Typhoid fever.	
	18	4	No.		
	22	8	Yes.		
XII.	12	42	Yes.	Typhoid fever.	
XIII.	13	..	No.	Typhoid fever.	Poor technique in collecting blood serum.
XIV.	14	..	Yes.	Typhoid fever.	
XV.	15	..	Yes.	Typhoid fever.	
XVI.	16	..	No.	Scarlet fever.	Poor technique in collecting blood serum.
XVII.	17	..	No.	Typhoid fever.	Poor technique in collecting blood serum.
XVIII.	19	..	No.	Typhoid fever.	
XIX.	20	..	No.	Pneumonia.	
XX.	21	4	Yes.	Typhoid fever.	
	26	10	Yes.		
	32	..	Yes.		
	37	26	Yes.		
	51	29	Yes.		
	53	..	Yes.		
	57	38	Yes.		
XXI.	23	10	No.	Typhoid fever.	A typhoid without temperature.
XXII.	24	5	No.	?	Not typhoid fever.
	30	6	No.		
	34	8	No.		
XXIII.	25	..	No.	Rheumatism.	
XXIV.	27	..	No.	Pneumonia.	
XXV.	29	..	Yes.	Typhoid fever.	
XXVI.	31	..	No.		High temperature some weeks after resection of hip.
XXVII.	33	..	No.	Pyosalpinx ?	
XXVIII.	35	..	No.	Tuberculosis.	
XXIX.	36	..	No.	?	No clinical history.
XXX.	38	..	No.	?	Not typhoid fever.
XXXI.	39	..	No.	Perinephritic abscess.	
XXXII.	40	36	Yes.	Typhoid fever.	
XXXIII.	41	24	Yes.	Typhoid fever.	
XXXIV.	42	79	Yes.	Typhoid fever.	
XXXV.	43	17	Yes.	Typhoid fever.	
XXXVI.	44	21	No.	Scarlet fever.	
XXXVII.	45	14	Yes.	Typhoid fever.	
XXXVIII.	46	7	No.	?	Not typhoid fever.
XXXIX.	47	10	Yes.	Typhoid fever.	
	63	43	Yes.		
XL.	48	60	No.	Malaria.	
XLI.	49	12	Yes.	Typhoid fever.	
XLII.	50	7	Yes.	Typhoid fever.	
XLIII.	52	..	No.		Surgical case.
XLIV.	54	8	No.	Typhoid fever.	
	56	12	No.		Absent after three days.
	60	16	Yes.		Well-marked reaction.
	62	27	Yes.		Reaction not so marked as in No. 60.
	67	31	Yes.		
XLV.	55	6	No.	Pneumonia.	
XLVI.	58	12	No.	Typhoid fever.	Absent after three days.
	59	15	Yes.		Well marked.
	61	24	Yes.		Not so marked as in No. 59.
	66	29	Yes.		
XLVII.	65	102	Yes.	Typhoid fever.	

These four cases (V, XXI, XXII, XXXVIII), with the histories belonging to each case, would certainly point to some form of intestinal infection. At the same time they emphasize the importance of being guarded in making a diagnosis of typhoid fever. They would also suggest at least the probability that many of the so-called cases of aborted typhoid were rather cases of mistaken diagnosis.

Case XI.—This patient, a child of about six years, was seen at apparently the outset of the disease. The clinical diagnosis was made early, for a younger child in the same family had been ill for about six weeks with typhoid fever, and this patient was thus brought early under the observation of her physician. Blood serum was secured on the second, fourth, and eighth days of her illness. The first two specimens gave no serum reaction. The third specimen gave a marked reaction. It was unfortunate that no serum was obtained between the fourth and eighth days, for we might then have been able to determine the exact day of the appearance of the reaction in this individual case.

Case XX.—A specimen of blood was taken from this young man on apparently the fourth day of the disease. The reaction to the serum test was marked, and continued to be so, so long as the patient was under observation (six weeks). An advantage of the serum test in confirming the clinical diagnosis was demonstrated in this case, for, with the reaction reported as present, the attending physician had the patient promptly removed from the country to the city, where he could have the conveniences of a hospital. While this was a very mild case, clinically considered, the serum reaction was always well marked. I hope to be able to keep this patient under observation until the disappearance of all serum reaction.

Case XLII.—This was a child, aged six years, in whom the most prominent symptom at the time the first blood specimen was secured—the sixth day of the disease—was marked pain over the right tibia. There were other symptoms present, however, suggestive of typhoid fever. Examination of the blood gave the serum reaction. The subsequent clinical history bore out the diagnosis, as made on the serum reaction, of typhoid fever.

Case XLV.—The serum test was made use of on the sixth day of the disease. There was no reaction. The clinical diagnosis was pneumonia, and this was rendered more probable by the presence of masses of diplococci in the sputum.

Cases XVIII, XXVI, XXX, XXXI, XL.—In all these cases the probable diagnosis, founded on the clinical history, was not that of typhoid fever. The serum test in each case was negative, thus supporting the clinical diagnosis. In some of these cases at the time the serum test was used the possibility of typhoid fever had not been entirely excluded, but the subsequent history bore out the negative result of the serum test.

Cases XIX, XXIII, XXIV, XXVII, XXVIII, XXXVI, XLIII.—In none of these cases had the diagnosis of typhoid fever been made from the clinical history. In fact, they were all diagnosticated *not* typhoid fever. There was a high temperature in each case, however, and this was used as the basis for testing the serum reaction. The absence of the reaction in every case strengthened its diagnostic importance for typhoid fever.

Cases XIII, XVI, XVII.—These cases have no value in determining the importance of the serum test for typhoid fever. The method used in securing the serum was faulty (for this I am responsible). They were undoubtedly cases of typhoid fever well advanced, and should have given the reaction under proper conditions.

Case XXIX.—This case also has no value in determining the importance of the serum test. The blood specimen was sent to the laboratory from the hospital with initials of the patient only. The hospital authorities can not trace the case from the initials, and the clinical diagnosis is unknown. The presumption that it was not a case of typhoid fever is strong, for the specimen was sent from the source where I had secured a number of my test cases—cases with high temperatures, but without the clinical history of typhoid fever.

Cases XLIV and XLVI.—The chief interest of this paper hinges on these two cases: Two physicians who were close friends, both professionally and socially. While they were not living together, they were living under very similar conditions, being thrown together a great deal in their social life. They were taken ill about the same time, and during their illness were in the same house, for Case XLIV, after having been confined at home three or four days, learning that the subject of Case XLVI was also sick, invited him to his house, in order that they might console each other. These patients were first seen by Dr. Talbot Jones, of St. Paul, December 11th; at least the eighth and fifth days respectively of sufficient illness to confine them to the house. XLIV at this time presented certain typhoid symptoms. Not so with XLVI.

I first saw these patients December 12th. A specimen of blood was at this date taken from XLIV in order to take advantage of the serum test as a means of establishing the diagnosis of typhoid fever. The result of the test was negative. Having considerable confidence in the serum test, from the laboratory results that had been secured with other cases previously examined, I felt no hesitancy in pronouncing this *not* to be typhoid fever; for this was at least the ninth day of the disease, and we can reasonably expect the reaction to be present on or soon after the fourth day of the disease. The clinical symptoms of typhoid fever still continuing in Case XLIV, another specimen of blood was secured for examination December 17th. The reaction was still negative.

Up to December 16th it had seemed as though the patients in Cases XLIV and XLVI were not suffering from the same disease, although they had many symptoms in common. At this date the characteristics common to the two cases were sufficiently pronounced to call forth an opinion from two physicians favoring their common nature, although both physicians at this time gave an opinion against the diagnosis of typhoid fever. Their opinion was based upon the atypical symptoms of XLVI and the absence of the serum reaction in Case XLIV. No blood specimen had been examined from XLVI at this time. The opinion that the disease in these two cases was one and the same was supported with but one dissenting voice at a consultation, held December 18th, between Dr. Boeckmann, Dr. Renz, and Dr. Talbot Jones, of St. Paul, and myself. Not only so, but the clinical symptoms in Case XLIV being so decidedly those of typhoid fever, there seemed to be but one possible diagnosis for both cases—viz., typhoid fever—and this in spite of the absence of the serum reaction in Case XLIV, and of typical typhoid symptoms in Case XLVI. But here, again, there was one dissenting voice among the consultants, this one still holding the opinion that Case XLVI was not one of typhoid fever, his opinion being based upon the clinical history.

At the request of Dr. Boeckmann, I secured for the first time, December 18th, a specimen of blood from XLVI, in order to submit it to the serum test. The reaction was negative. The diagnosis of typhoid fever was still held, however.

On December 20th specimens of blood were secured from both XLIV and XLVI, and on examination both specimens for the first time gave a positive reaction with the serum test for typhoid fever. This must have been at least the seventeenth day of illness for XLIV and the fourteenth day for XLVI.

It seems like a strange coincidence that these two cases of typhoid fever—not originating in the same house, yet probably due to the same source of infection—should show no response to the serum test until this late date, and this, too, after the continued successful results that we had had with all previous cases examined. It was hard to believe that a test which had failed in but one out of one hundred and twenty-three cases of typhoid fever reported by Dr. Wyatt Johnston, and which had not failed in any one of the previous twenty-three cases of undoubted typhoid fever examined at the Minnesota State Bacteriological Laboratory, should be so tardy in giving a reaction with these two associated cases.

There are lessons to be learned from this experience:

First. Not to ignore the clinical symptoms of typhoid fever because of the absence of the serum reaction.

Second. Not to condemn the serum reaction because it does not always make itself evident early in the history of the case.

Third. The importance of using all diagnostic methods at our command in our attempt to reach positive conclusions.

In all of these cases reported the blood serum was collected by the dry method (I am responsible for this). Criticism as to results may possibly be based by some upon this fact. But Dr. Wyatt Johnston has shown (*British Medical Journal*, December 5, 1896, p. 1629) that the dry method compares very favorably in accuracy with the use of fresh serum in the diagnostic application of this test. In fact, he states that "when a negative result was obtained by the dry method the result by the fluid serum was also negative, and where on re-examination the positive result was obtained with the fluid serum, without exception the duplicate sample of dried blood also gave a positive result." *

Of the forty-seven cases which I have reported (excluding the four cases of poor technique or imperfect history) the clinical diagnosis of typhoid fever was verified in every case by the serum test except in Case XI. In this one case the clinical diagnosis of typhoid fever should have been withdrawn, for it undoubtedly was wrong.

In those cases where the clinical diagnosis had been abandoned, repeated examinations of the serum failed to give the typhoid reaction.

It is worthy of note that the blood specimens were submitted to the laboratory for investigation without any clinical history, and the laboratory diagnosis was based solely upon the serum reaction.

In closing this paper I wish to express my appreciation of the hearty co-operation shown in this work by Professor Wesbrook and Dr. Wilson. Without them it would have been difficult, or even impossible, for me to carry on this study.

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* N. B.—In a circular issued January 7, 1897, Dr. Wyatt Johnston states that "solutions of the entire blood react more intensely to the test than solutions of blood serum alone . . . the reverse of what we had anticipated."

CARDIAC DISTURBANCES FROM GASTRIC IRRITATION.*

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It is well known that organic disease of the heart will impair the functions of the stomach as it does those of the liver and of the kidney, and that ultimately even organic changes may be produced in that organ and a cardiac stomach result, just as we have a cardiac liver and a cardiac kidney.†

It is a matter of observation, and has been recorded by various authors, that grave cardiac disease may be entirely hidden under the mask of a severe attack of dyspepsia, loss of appetite, feeling of weight in the epigastrium, pain in the epigastrium, eructations, flatulence, constipation, etc., and unless the patient is very carefully examined the real seat of the disease, the heart, will escape all notice.‡

It is also well known that the sudden impairment of the digestive function, the supervention of a dyspepsia, may provoke disturbances in a heart already diseased; and that overloading of the stomach is fraught with the greatest danger for the cardiopath is a matter of common information.

What is not so well known, in fact, is but little known, and to which I desire to call your attention this evening, is that functional disturbances of an otherwise normal heart may be produced reflexly by irritation of the stomach.

These departures in the heart from the normal standard of action have been, so far as observed by me, of the following types:

I. Disturbances of rhythm, perceptible or not to the person affected.

II. Dynamic disturbances, recognized by the presence of abnormal sounds or murmurs over the heart.

III. Painful neuroses.

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* Read in part at the meeting of the New York County Medical Association, October 19, 1896.

† Von Ziemssen's *Cyclopædia*, vols. ix and xv. Sée. *Du diagnostic et du traitement des maladies du cœur.* Paul, C. *Du diagnost. et du traitement des maladies du cœur.*

‡ A. Leared. On Disguised Disease of the Heart. *Medical Times and Gazette*, London, June, 1867. Sée. *Loc cit.*

I. DISTURBANCES OF RHYTHM.—(*a*) *Intermittence.*

CASE I.—Mrs. B., Jr. In November, 1873, I was called to attend Mrs. B. I found her lying in bed complaining of headache and great weakness. The history of her ailment was as follows: She had gone to a funeral. On the way back from the cemetery the party, as is the custom of some, stopped at a wayside tavern and regaled themselves with beer, bread, cheese and ham sandwiches. On reaching her home about an hour and a half later, her headache, which had appeared shortly after reentering her carriage, became very severe. She had some nausea, and soon thereafter vomited. She vomited several times during the night and her headache was somewhat relieved by the emesis. This morning (*i. e.*, that of my visit) she is somewhat better, but her head still aches and there is still some nausea.

Status Præsens.—Countenance very pale; tongue coated with a heavy white fur; temperature slightly elevated (100° F.); pulse, 75, but intermitting. A careful examination of the heart disclosed nothing more than this intermission at irregular intervals. Complains of some pain in her stomach; feels chilly.

From my knowledge that the patient had hitherto been free from any cardiac ailment, from the absence of corroborative indication on the part of the heart, and from the history as above given, I concluded that the stomach was the organ at fault, and that the cardiac irregularity was of reflex origin due to gastric irritation. I treated her upon this basis. The digestive tract was cleared out with a few doses of calomel and soda; then minute doses of tincture of nux vomica with Fowler's solution to relieve the nausea and the gastric irritability, and to tone up the stomach, which I also believed to be somewhat atonic, were prescribed. The patient was given small quantities of milk and limewater, two drachms at a time, and as the unpleasant sensations abated the quantity was increased; gradually beef essence was added to the diet, then a soft-boiled egg. On the fifth day, the stomach being evidently in fair condition again and the cardiac irregularity having already entirely disappeared, a little broiled steak was allowed. At the end of the week she was up and about and treating herself fairly liberally in the matter of food, though I counseled her to be prudent in this respect for some time.

I had this lady in my *clientèle* for nearly six years thereafter, attended her in various confinements, treated her for bronchitis, but never had her complain of anything that could be attributed to the heart, and in my examinations of her chest always found that organ in excellent condition.

(*b*) *Palpitation.*

CASE II.—Mrs. M. (June, 1880), aged forty-six years. Woman of ordinary stature, of good physical development, and in fair flesh. She is the mother of four children, two of whom are living. She has always enjoyed good health until this sickness came upon her. About six years ago, while residing in New York city, she had an attack of dyspepsia. She was relieved, and again attacked, and thus it went on. She suffered much from palpitation, so that her physician diagnosticated her case as one of heart disease. This last attack has been the severest of all that she has ever had.

Symptoms.—Tongue is coated with a light white fur; she has no appetite; there is great distress in the epigastrium soon after eating; she feels as if she had a lump of lead in her stomach; she has shooting pains in the left side; they come from about the cardiac end of the stomach and move upward on the left side into the præcordium, as high up as the second intercostal space. Occasionally she feels the pains also on the right side, in the same region, and sometimes they are most marked around her waist, encircling her with a girdle of pain.

Attacks of palpitation come on; then she feels her heart beat furiously against her chest, and she must sit down or lie down until the heart has calmed down, which will take from a half to two hours. She is very much alarmed about her heart; she feels rather weak and let down. An examination of the heart revealed nothing abnormal, either as to size, position, or sounds. The stomach appeared normal.

Diagnosis.—Atony of the stomach, and the heart symptoms depending thereon.

Treatment.—Rigorous and abstemious diet. A digestive ferment preparation with her dinner and supper; a cold infusion of columbo root, three ounces, before retiring at night and shortly before breakfast. This treatment she continued for two weeks, and then she presented herself again at the office. She was improving rapidly and growing much stronger. She had had no palpitations for a week now.

Treatment to be continued.

July 5th.—She is doing very nicely. No more palpitations; occasionally still some præcordial pains. Tincture of nux vomica with Fowler's solution prescribed in place of the medication previously directed. To take a hot sulpho-saline bath, with a douche to the chest every other day.

August 15th.—She is in excellent condition. She is entirely free from abnormal phenomena, and has never felt better in her life.

In Case III, following, palpitation, as will be seen from the history, was also present, and helped to mislead in the matter of diagnosis.

II. DYNAMIC DISTURBANCES, RECOGNIZED BY ABNORMAL SOUNDS OR MURMURS HEARD OVER THE HEART.

CASE III.*—Mrs. B. A., living in M., a small town in southern Ohio. I saw her, having been sent for, on March 31, 1879.

She is a woman of good stature, good physical development, and in fair flesh. She is the mother of seven children, the youngest two of whom are twins and now fourteen months old.

In her last pregnancy she suffered much with pains in the belly and in her lower limbs, so much so that she was not able to walk. There was also much disturbance of her stomach. She was delivered of the twins on January 13, 1878, and has been ailing continuously since then, being melancholic and complaining of loss of appetite, of a bad taste in her mouth, and of paroxysms of violent heart-beating. These attacks of palpitation worried her greatly.

She is under the care of an excellent practitioner of the town. About six weeks ago, after a more prolonged examination, he made a diagnosis of heart disease, and informed Mrs. A. that she must be very careful of herself, that she must not go out of the house, as she might at any moment fall dead.

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* Owing to the manuscripts of two different cases having become mixed, this case was incorrectly reported in the brief paper on this subject read before the County Medical Association.

Status Præsens.—She vomits after every meal and frequently in the intervals. The tongue is very much coated with a heavy white fur. She has a sense of oppression in the epigastrium after eating, and her respiration becomes embarrassed; she will vomit soon, and then she is relieved. Her breath is very offensive; the bowels are irregular, but mainly inclined to be constipated. No headaches; temperature normal; pulse, 80, regular, but rather weak. She is depressed, gloomy; she is readily moved to tears—in fact, cries a great deal and without apparent cause. She does not venture out of her home since she received the above-mentioned warning. She is almost afraid to cross the floor. She eats the food prepared for the family, and it seems to be composed of rather heavy dishes. She eats late at night, before retiring, and drinks considerable beer. She sleeps poorly.

Inquiring as to her menses, she replied that she was still nursing the twins and that during lactation she never menstruated. She goes from lactation into pregnancy without becoming aware of it until at a later period.

Examination.—Lungs normal. Heart: Dimensions normal. At the apex there was heard at times, not always, with the first sound a slight whistling or blowing, which to me did not have the characteristics of a mitral murmur. The other sounds were perfectly normal. Heart's action rather feeble. Questioning her again closely, I found that the palpitations and the crying spells came on most frequently shortly after eating. From the whole appearance of the patient and from the results of my examination, I felt confident that the heart itself was in good condition, and that her troubles were not due to it, but rather to the stomach, though upon questioning her she made no complaint of it, and stated that she was rather a moderate eater.

I reserved my diagnosis, however, until after the dinner. At the meal I saw that the patient ate grossly large quantities of greasy food. She ate very rapidly, and, though she served everybody, had finished as soon as the others. During the dinner I noticed that she got up once and spat out something; she said that the meat she had just then taken had sickened her. About ten minutes after the conclusion of the dinner she began to vomit and threw up what she had eaten. I called for the vomit (having previously directed her to use a clean vessel for the purpose) and noted therein large pieces of meat which she had swallowed without mastication.

I decided at once that it was the stomach that was at fault. I assured the patient that her heart was sound, that she need have no fear of going out; on the contrary, that I must insist upon her taking sufficient exercise and getting sufficient fresh air. I prescribed a mild and easily digestible diet, and prohibited all tea and coffee. I prescribed a digestive ferment, pancreatine, to be taken before meals, and small doses of nux vomica four times daily, in the intervals. The use of Hunyadi János water and the fountain syringe were advised for the constipation.

She improved very quickly, and in a short time all her ailments had disappeared; she went out as much as she had formerly done, and was always cheerful and in good spirits. On November 28, 1879, she was delivered of a daughter. She felt better throughout her last pregnancy than in any of the previous ones; she had a very easy labor, and made a quick recovery.

In the spring of 1880 she visited me in Cincinnati. I requested permission to examine her heart and found that organ entirely normal. She is still living and has even a second husband, the first one having died three years after the events described.

Case IV.—(March 5, 1881.) D. V., aged fifty years, Italian, man of good frame; was a soldier in the War of the Rebellion. After that he kept a fruit stand and led a rather hard life; long hours at the stand and much exposure to cold and wet. Ate very irregularly. He is a strong smoker; smoked all the time, mainly "stogies," sometimes a pipe. He has been considerable of a drinker, and occasionally has gone on a spree. Lately he is said (he himself will not speak of it) to have experienced great grief over the loss of money he had intrusted to a very prominent person.

For the last six months he has been feeling badly and has taken medicines obtained at a neighboring drug store. In the last month he became so weak that he was compelled to keep his bed. A physician was called in and advised that he be fed on rye bread, three times daily and plenty of it, apples, cabbage, peaches, etc. He got very much worse and another physician was called in, who made a diagnosis of "heart disease," and told him he could not live a month. A third physician was called in with the second and he confirmed both the diagnosis and the prognosis.

Status Præsens.—Patient is very much emaciated, very haggard, and rather sallow looking. He is very restless in bed, rolls around much. He has pain in the epigastrium and in the præcordial region. Toward night his limbs begin to give him pain, his throat becomes dry, and he is said to have fever. He has much thirst, and wants to take a drink every little while. He can not sleep at night, only dozes, and wakes up with a start. He can not sit up in bed without his head swimming. He has no appetite; when he eats any food it sickens him. He is always constipated; has been so for years.

Examination.—The thermometer does not now, 4 P. M., indicate any fever. The tongue is coated with a yellowish-white fur. The pharynx is dry; shows a condition of chronic pharyngitis; thick, inspissated mucus collected thereon. Lungs healthy. Heart: Boundaries normal. Reduplication of the first sound. A murmur, blowing in character, is heard at the apex with the first sound. Heart's action feeble. Pulse, 40. Stomach: There is much tenderness to pressure in the epigastrium. The least bit of food, even but a few teaspoonfuls of light meat broth, will produce a sense of pressure, of weight, and most frequently of considerable pain. Then there comes over him a feeling of irritability and general restlessness that makes him a source of great trouble to his family. Liver normal. Spleen normal. Bowels constipated. Scybala can be felt through the abdominal walls. He is much troubled with flatulence and has frequent attacks of colic. All specific infection denied absolutely and positively.

The diagnosis as to the condition was not exactly clear at this time. It was a question of a chronic gastritis of a low type, or of atony of the stomach with great irritability of its mucous membrane. Much also could be attributed to the flatulence. Moreover, the question of the presence of a malarial infection, which might give rise to all these phenomena, presented itself. The heart I looked upon as but a secondary matter, as the prominent symptoms pointed altogether elsewhere. Under the circumstances the patient was put tentatively upon a milk diet and quinine prescribed for him.

March 7th.—I have not as yet detected any febrile movement.

8th.—At 4 A. M. I was called up by the son, who told me his father was dying and wanted me at once. I went and found the patient very much alarmed and depressed; he was decidedly hysterical. A friend had visited him the previous evening and given him the consoling information that he looked like a dying man. I reassured him and ordered some Hoffmann's anodyne with tincture of valerian for him.

As he complained of much pressure and weight, with some pain, in the epigastrium, I prescribed the following powder for him:

℞ Lactopeptin	gr. xij;
Sodii bicarbon.	gr. ij;
Morphinæ sulphat.	gr. $\frac{1}{5}$.

M. Ft. chart. no. j.
Sig.: One powder every five hours.

At my second visit, 9 A. M., I found him feeling better and much more cheerful. I was now convinced that the so-called fever—heat and cold—were merely subjective sensations, a part of the hystero-neurasthenic condition of the patient, and not a recognizable febrile movement. I directed, therefore, that the quinine be omitted, and prescribed in its place nux vomica as a general tonic and for its special action upon the stomach, and Fowler's solution, both for its general tonic properties and its special virtues of allaying gastric irritability. Five drops of the mixture every three hours. He is to be sponged morning and evening with water and whisky. Diet: Milk and limewater, two parts of the first to one part of the second, two ounces to be fed to him with a teaspoon every three hours. Boiled bread and milk, half a cupful, morning and evening (likewise eaten with a teaspoon). Bowels to be moved with large enemata.

9th.—He is better. Pains in the præcordium are leaving him. Stomach is not so tender to pressure. The bread and milk and the milk and limewater are well borne. He slept very well last night; no fever.

10th.—The morphine in the powder reduced to an eighth of a grain.

11th.—Complains of feeling hungry. He is to try a little dry rice with a tablespoonful of beef extract (home made) poured over it. Omit the morphine powders.

15th.—Complains of feeling badly again. Had an attack similar to the one he had had on the morning of the 8th; about 9 A. M. he began to feel chilly and later on hot; his nose and throat felt dry. He had a sort of suffocating sensation.

16th, 10 A. M.—Did not sleep well; complained of having passed a feverish night. 9 P. M., he was being walked about the room, as he could not rest in bed. I was informed that toward evening another suffocative attack had come on, and about an hour ago he had had a chill. The thermometer, placed in the axilla and allowed to remain seven minutes, indicated that the temperature was only 99° F. I ordered him to take the ether and valerian mixture, and to repeat the dose in two hours, and assured him that the attack did not amount to anything, and this assurance seemed to do him much good.

17th.—He is feeling better.

23d.—He is improving satisfactorily, able to sit up now without feeling any dizziness. Pulse 60 and of good force. The tongue being coated somewhat yellow, I directed that the nux vomica and Fowler's solution mixture be omitted, and prescribed in its place diluted nitro-hydrochloric acid with strychnine. A digestive ferment after meals. Rhamnus frangula to move his bowels.

29th.—He is growing stronger; can sit up all day now. He does not feel so well to-day; believes that the acid disagrees with him. To omit that and resume the nux and Fowler's mixture, ten drops, three times daily. His digestion, on the whole, is very much improved; his diet to be reinforced; he is to have a piece of broiled steak and a glass of beer for his dinner.

May 18th.—He has continued to improve steadily. His digestion is very good. His bowels act regularly. He feels strong; walks down three flights of stairs, takes a good walk, and returns to his home, remounting the three flights without feeling any undue fatigue. I examined his heart again to-day. Neither the murmur nor the reduplication could be discovered.

September 16th.—He went to the country on June 1st, as I advised him to do. He returned two days ago and presented himself at the office. He is feeling well and strong, and has a good and robust appearance.

In the winter of 1881–'82 he suffered somewhat from nervousness and neuralgic pains, but these also disappeared upon treatment.

June, 1884.—He says he is all right now. He is engaged in his previous occupation, and takes care of a fruit stand; he is on duty from early evening till late at night. During the day he attends to other matters.

This man I treated at intervals for indigestion with constipation, flatulence, pain about the præcordium, and nervousness, which was always brought on by a violation of the rules of conduct laid down for him as to smoking and drinking. It seemed that the first (after feeling well for a while he would resume his stogies, stumps, etc.) was the principal factor in the recurrence of attacks. Occasionally the food he received at the places where he worked would be responsible. The last time I attended him for such an attack was in the fall of 1892.

A recurrence of the heart phenomena I did not again discover.

(To be concluded.)

FACTS RELATIVE TO
THE TREATMENT OF DISEASES OF THE UPPER AIR-PASSAGES.

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There is probably no part of the human body that has been so abused and maltreated (viewed from a pathological standpoint) as the upper air-passages. Every possible malodorous irritant sold under the guise of an antiseptic powder or solution has been blown, syringed, douched, and sprayed into these cavities, and as each year brings forth a new crop of antiseptics, the attack is renewed, until physicians become discouraged and declare that "Catarrh can not be cured."

So long as we treat symptoms, nothing but failure can result. I have frequently had patients referred to me stating that they had used Seiler's tablets, listerine, etc., and as they did not recover, by inference I would understand that they thought theirs must be very stubborn cases. The absurdity of supposing that a mere cleansing solution ever cured any form of catarrhal inflammation of the upper air-passages can be appreciated by one making a specialty of these diseases.

By the term catarrh we understand an increase of the natural secretions above the want and provisions of Nature; not only is this so, but the secretion is also vitiated, due to a local pathological condition.

The term "dry catarrh" of course is a misnomer; but by this term we understand an inflammatory condition without discharge.

About eighty per cent. of these cases are due to a local irritant; twenty per cent. perhaps are due to an inherited or acquired cachexia. Of the local irritants, the most prominent are exostoses and enchondromatous growths in the nasal lumen; deflected sæptum, ethmoiditis (producing in some cases polypoid growths); bony hypertrophy of the turbinates, and also hypertrophy of the erectile tissue. Post-nasal growths, adenoid hypertrophies, hypertrophic amygdalitis, etc.

The removal of these irritants is the only hope of securing even comfort to the patient, to say nothing of a cure. For the removal of exostoses and enchondromatous spurs and growths from the nasal sæptum there is probably no instrument that can be used so successfully as the saw, if wielded by one possessed of some manual dexterity and skill born of large experience. Deflections of the sæptum, by the skillful use of the saw, especially if operated on between the ages of ten and forty-five years, are probably followed by better results than by the use of any other instrument, and the case is rare indeed where relief is not quickly obtained from these operations.

Ethmoiditis treated on the plan of Woakes, by introducing a saturated solution of chromic acid directly into the ethmoid cells by means of a platinum needle made with an eye like a bodkin, so that when dipped into the solution it will carry quite a quantity of the solution into the necrosed bones, is in all probability the best plan of treatment. Where there are neoplasms associated, the proper thing to do is to remove the entire middle turbinated body by means of the cold snare; but it should not be done too precipitately lest there should follow distressing hæmorrhage. Either bony hypertrophy of turbinates or hypertrophy of the erectile tissue will most certainly yield to the galvano-cautery, but to be successful it must be done thoroughly, and results, of course, will be governed, as are all operations within the nasal lumen, by the intelligent treatment given by the surgeon to the resulting wound, of which I shall have more to say farther on.

A very large percentage of the diseases of the upper air-passages are incited by adenoids, and while this condition is perhaps often secondary to nasal obstruction, it is, nevertheless, manifest that this inflammatory condition will not subside even when the nasal obstruction is removed. Therefore the removal of post-nasal growths is imperative; not only growths but adenoid hypertrophies should be just as surely and as thoroughly removed, and, say what we will, this operation requires a thorough knowledge of the anatomical relation, and skill in the use of the instruments designed for the removal of this hypertrophic tissue, growths, etc. Hypertrophied tonsils should be removed by the amygdalotome, and to be successful must be thorough, so that no fragments protrude beyond the pillars of the soft palate.

Of the diseases affecting this region due to a constitutional condition might be mentioned, first, atrophic rhinitis. A very large percentage of the patients afflicted with this disease succumb to tuberculosis sooner or later, and of those who do not, their prolongation of life may be attributed to favorable hygienic and sanitary environments; also to faithful and careful cleansing of the parts and keeping the physiological action of the nose in as perfect condition as possible. The best method of doing this is the daily use of the syringe with pure hot water. The syringe manufactured by Tiemann & Co., with a short nasal tip for use in the anterior nares, with a shifting shield which has a post-nasal tip also, is one that can be relied upon for thorough cleansing of the nasal lumen and post-nasal space. Not only is this plan of treatment beneficial in removing putrid secretion, but the warmth, irrigation, and massage have an influence in equalizing the circulation and restoring the lost nerve power. As a means of giving rest to these overwrought, worn, and exhausted parts, after such cleansing, it is desirable to find some remedy that will physiologically put the parts in splints. This I believe I have found in the following prescription:

℞ Powdered thiol....................	gr. x;
Menthol..........................	gr. v;
Liquid blancolin..................	℥ j.

M. Sig.: Apply three or four times a day by means of an oil atomizer.

This proves of still greater benefit if it can be used as hot as possible consistent with the comfort of the patient.

I was led to make a trial of thiol because of the good results I had obtained in some forms of skin diseases I had treated with this remedy, and I had also found it beneficial as an air-tight dressing in fresh wounds. The foregoing prescription I am using with very satisfactory results after operations within the nasal lumen.

Constitutional diseases connected with the upper air-passages commonly met with, next in importance to the foregoing, are syphilis and cancer. In the former we have a disease that is surely amenable to treatment, and a favorable prognosis can almost invariably be given if the physician can have perfect control of the patient. Iodide of potassium and the mercurials are almost specifics for this disease, wherever found, if handled with intelligence.

In the treatment of the latter disease (cancer) the reverse is true. There is no known specific or even remedy that exerts any marked control over this disease. Inoculations with erysipelas cocci seem to have a favorable influence for a time, but it is soon lost; so that the early and free use of the knife is the only plan of treatment promising any results.

In the cancerous cachexia, the strumous and tuberculous diathesis as an aid to any plan of treatment that may be adopted, there is no remedy that I value more highly than calomel in doses of a tenth of a grain three times a day for say one to three weeks. Calomel acts as an alterative, but its greatest benefit, I think, is in its ability to increase the eliminative powers, thus relieving the system more rapidly of deleterious matter. The judgment of the physician must be relied on as to the patient's idiosyncrasies in adopting this plan of treatment.

In conclusion, I wish to speak of acute inflammation of the parts which this paper mentions. These, as a rule, are of two varieties—traumatic; or from nerve shock, due to exposure, so-called "taking cold." In either case the following prescription will prove almost a specific:

℞ Eucaine	gr. x;
Cocaine hydrochloride	gr. x;
Aquæ	℥ vj.

M. Sig.: Spray every hour in the nose sufficient to be felt in the throat.

If the patient is taught to inhale while using this spray, so that the solution may be carried well within the larynx, it is far more beneficial than it otherwise would be. The advantage of this combination is, that while cocaine is a valuable remedy of itself, the danger has been the liability of the patient to become addicted to its use. By the combination of eucaine, which is not a thorough local anæsthetic in the nose, the nervous excitability produced by cocaine (intoxication) will not be produced, thereby making this prescription one perfectly safe, as nobody will contract the cocaine habit by using this combination. I would recommend the abandonment of this spray after the third day, and instead the use of the thiol formula until entire relief is obtained.

777 DE KALB AVENUE.

Therapeutical Notes.

Salophene in the Treatment of Sciatica.—Dr. Luigi Cappellari (*Gazzetta degli ospedali*, 1896, No. 35; *Deutsche Medizinal-Zeitung*, March 29, 1897) reports some cases of good results from the use of salophene, but in none of them was the disease of long standing. He gave from forty-five to seventy-five grains a day. Unpleasant effects were either wholly wanting or very transitory, consisting of dizziness, somnolence, or a slight increase of perspiration.

Silver Nitrate in the Anorexia of Pulmonary Tuberculosis.—The *Journal des praticiens* for April 10th gives the following formula:

℞ Silver nitrate	7½ grains;
Bread crumb	a sufficiency.

M. Divide into fifty pills. One to be taken with each meal.

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KOCH'S NEW TUBERCULIN.

IN the *Deutsche medicinische Wochenschrift* for April 1st there is a communication, dated November 14, 1896, by Dr. Robert Koch, of the Berlin Institute for Infectious Diseases. According to an excellent summary of the article given in the *Gazette hebdomadaire de médecine et de chirurgie* for April 8th, Koch recounts that his old tuberculin, an alkaline extract which, for the sake of brevity, he calls TA, has been shown by experience to render an individual proof against the tuberculous toxines, but without affecting the bacilli themselves. Having always in mind the fact of the disappearance of the tubercle bacilli in tuberculosis, Koch was led to think that another substance, one capable of protecting against the bacilli, must also reside in the cultures. Again the problem arose of rendering the bacilli assimilable or soluble. He therefore undertook researches which have ended in his finding a process by which he can not only render the tubercle bacilli assimilable, but also extract from them the immunizing and curative substance.

The process is purely mechanical. Dried tuberculous cultures are triturated in an agate mortar with a pestle of the same material. After prolonged trituration it is found that the bacilli are gradually disappearing from the mass. To remove them definitively, the mass in the mortar is mixed with sterilized water, and the mixture is placed in a powerful centrifuge. At the end of half an hour the liquid has separated into two parts—the upper one thin and transparent, but slightly opalescent, and the other one thick and adherent to the bottom of the vessel. The thick portion is again dried, triturated, mixed with sterilized water, and subjected to the centrifuge. Once more the liquid separates into two distinct parts. The operation is repeated several times until the thick portion is practically reduced to nothing.

Koch has observed that the opalescent liquid obtained by the first centrifugal process has all the properties of the old tuberculin, but those produced by the subsequent manipulations do not differ from each other, and they constitute the new tuberculin, which is entirely different from the first. Experiments on animals, followed by others on the human subject, have shown Koch that the new tuberculin does not provoke either local or general reaction, has manifest immunizing properties, and brings about the cure of tuberculosis, provided the disease is not too far advanced.

Experiments on guinea-pigs have shown that when an animal is immunized by using the largest injections that will not produce fever, and by augmenting the dose progressively, there comes a time when the animal bears with impunity repeated injections of virulent tuberculous cultures; if it is killed, not a trace of tuberculosis or of tubercle bacilli is found. If inoculations with virulent cultures are made before complete immunity has been acquired, the animals still survive; if they are killed, nothing but caseification of the lymphatic ganglia corresponding to the points of inoculation is found, without any visceral tuberculosis or tubercle bacilli. Finally, if the virulent inoculations are practised when there is only incipient immunity, the tuberculosis is found only in the lungs.

As to the curative action of the new tuberculin in guinea-pigs, Koch has been able to accomplish a cure in from fifteen days to three weeks in cases of tuberculosis that were not advanced. In the case of man, the initial dose should not exceed 0.002 of a milligramme, and if that amount causes fever it must be reduced. The injections are given every second day, and the dose is slowly but progressively increased to 0.5 or one milligramme. If the new dose causes the temperature to rise as much as a degree F., no more injections should be given until it has fallen. In man, the new tuberculin produces its effects only if the tuberculosis is not of too long standing or complicated with secondary streptococcous infections, on which it has no action. It rarely proves effective with patients whose temperature exceeds 100.4° F.

With his new tuberculin, Koch has achieved a number of successes, chiefly in cases of cutaneous tuberculosis. He calls these successes ameliorations, although, as he says, in many cases there have been real cures; he prefers to wait longer before speaking of cures. In persons with pulmonary tuberculosis, as well as in those with the cutaneous forms of the disease, the new tuberculin has never provoked either local or general reaction. In the pulmonary cases a transitory augmentation of moist râles is sometimes observed; the expectoration diminishes and contains fewer and fewer tubercle bacilli, until finally they disappear, the patients gain flesh, the râles become less numerous, the dullness is reduced, and the fever declines so that the temperature gets to be normal after a time.

The new tuberculin is at present furnished by a German house, in the form of a glycerin solution containing a milligramme in each cubic centimetre. In preparing the initial dose (0.002 of a milligramme), the solution is to be diluted with the requisite amount of sterilized physiological salt solution.

THE NEW INDIANA MEDICAL-PRACTICE LAW.

In our miscellany columns for this week we print the text of the new medical-practice law of the State of Indiana. Those of our Indiana colleagues who have been striving for the enactment of some law to regulate the right to practise regard this law as a substantial gain, but at the same time they recognize that it leaves much to be desired. The law provides for the establishment of a State board of medical registration and examination. This board is to consist of five members, to be appointed by the Governor, and it is stipulated that no "school" or "system" of medicine shall have a majority representation on the board, also that the board shall be non-partisan, that is, not more than three of its members shall belong to any one political party. No professor or teacher in a medical college is eligible for appointment on the board, and it is further provided that "each of the four schools or systems of medicine having the largest numerical representation in the State shall have at least one representative on said board."

So there are at least four "systems" of medicine recognized by law in Indiana. We suppose it is safe to take it for granted that three of them are the practice of the non-sectarian physician, that of the homœopathist, and that of the eclectic; whether the fourth is that of the "physio-medicalist," that of the Thomsonian, that of the "orificial surgeon," or that of the "osteopathist," we have no means of knowing. Neither is there anything in the law, so far as we have been able to discover, that explains whether the four "systems" having "the largest numerical representation in the State" shall be reckoned as those whose practitioners are the most numerous at present or after the sifting process has been applied by the board, for section 2 seems to make the law retroactive.

It is enacted that the board shall establish a standard of the "standing" of medical schools, and that that standard shall equal the average of what is required in the other States—that is, the average between zero, so to speak, and the most that is required by any State—an average rather perplexing to arrive at, we should think. If an applicant is not the possessor of a diploma issued to him by a school that comes up to the standard fixed by the board, he "shall have the privilege of being examined as to his qualifications to practise medicine, surgery, and obstetrics in such manner as the board shall provide, and if he shall pass an examination satisfactory to the board he shall receive a certificate the same as if he had presented a satisfactory diploma and other evidences of qualifications for the practice of medicine." If he fails on his examination, he may be examined again and again on payment of a prescribed fee; or, on failing, "he shall have the right to appeal to the Circuit or Superior Court of the proper county, requiring such board to show cause why such applicant should not be permitted to practise medicine, surgery, and obstetrics in the State of Indiana, upon the applicant giving a good and satisfactory bond, to be approved by the court, to secure all costs of suit should appeal be determined against him."

A person may take out a separate license as a practitioner of midwifery under conditions analogous to those imposed upon candidates for the general license, but pertaining only to obstetrics. We are sorry to see that the "refracting optician" is exempted from the operation of the law. It is to be hoped that not many years will elapse before the law is substantially improved.

EUROPHENE IN THE TREATMENT OF ULCERS OF THE LEG.

Dr. L. Nied, of the St. Elizabeth Hospital, in Vienna (*Wiener klinische Rundschau*, April 4, 1897), remarks that, although ulcers of the leg usually do well under the iodoform treatment, a change of treatment is sometimes desirable, especially in view of the frequent occurrence of toxic phenomena from iodoform. If the ulcer is large, as is not seldom the case in hospital practice, the use of iodoform is still more dangerous. He thinks that europhene is a satisfactory substitute for iodoform, at least so far as ulcers of the leg are concerned. He employs it in two forms—mixed with an equal amount of very finely powdered boric acid as a dusting-powder, and in the shape of an ointment made by dissolving three parts of europhene in fifty of vaseline over a water-bath and adding fifty of lanolin. This ointment, he says, is rather weak, and there is no objection to increasing its strength to that of five or even ten per cent. of europhene, especially in cases of torpid ulcers which show no tendency to heal.

He gives brief accounts of twelve cases in which no other remedy was employed, all but two of which were examples of chronic ulcer of the leg in middle-aged and elderly women. One of the other cases, in a woman fifty-six years old, was one of ulceration consequent on cervical scrofulous adenitis. On the third day after the use of the europhene dusting-powder was begun, the exposed gland began to change its unfavorable aspect, the suppuration was diminished, and the sore became more even in surface. On the eighteenth day, the ulcer was free from pus and was slowly cicatrizing. By the end of five weeks the gland was sound. The other case was that of a young woman with a bedsore on the back, of fourteen days' standing. The ulcer was cleansed and dusted with the powder, and it was entirely healed in three weeks.

In all the twelve cases no other treatment was used than ordinary cleansing of the ulcer, followed by the application of europhene in the form of either the powder or the ointment. The healing process set in promptly and there was no irritation of the adjacent tissues. The resulting cicatrices were smooth and supple. In general, the employment of the powder of europhene and boric acid brought about cicatrization more rapidly than that of the ointment. The author considers europhene a sovereign remedy in the treatment of ulcers of the leg, entirely free from by-effects, one that, especially in cases of extensive ulceration, is always to be preferred to iodoform, from the unpleasant odor of which it is quite free.

MINOR PARAGRAPHS.

AN ABNORMITY OF THE VAGINA AS A CAUSE OF STERILITY.

In an article on sterility (*Tidskrift for den norske Laegeforening*, 1896; *Centralblatt für Gynäkologie*, April 3, 1897), Dr. E. Rode, of Christiania, speaks of a minor abnormity of formation which consists in a prolongation of the posterior columna of the vagina on to the hymen, whereby the hymen is rendered very resistant. A simple remedy is that of a transverse incision of the columna behind the hymen, followed by a suture so contrived as to convert the wound into an antero-posterior one.

A NEW PORTUGUESE JOURNAL.

We have received the second number of the first volume of a journal entitled *Archivos de Medicina*, published in Lisbon and edited under the direction of Dr. Camara Pestana. It is a monthly of forty-eight large octavo pages of reading matter. The contents are well arranged, and the journal has an attractive appearance.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 20, 1897:

DISEASES.	Week ending April 13.		Week ending April 20.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	0	9	2
Scarlet fever	238	9	209	6
Cerebro-spinal meningitis	0	0	5	3
Measles	193	6	215	5
Diphtheria	233	26	220	33
Croup	12	6	8	7
Tuberculosis	231	98	146	125

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital-Service :

Small-pox—United States.

New Bedford, Mass.	April 10–17	1 case.	

Small-pox—Foreign.

Cardiff, Spain	March 20–27	5 cases.	
London, England	March 20–27	21 “	
Nagasaki, Japan	March 10–17	68 “	15 deaths.
Osaka and Hiogo, Japan	Feb. 28–March 20	50 “	22 “
Rio de Janeiro, Brazil	Feb. 6–13	2 “	
Cardenas, Cuba	Feb. 27–April 3	85 “	25 “
Madras, India	Feb. 5–12		4 “
Rio Grande do Sul, Brazil	Feb. 1–27	20 “	3 “
Calcutta, India	Feb. 28–March 6		7 “
Madrid, Spain	March 24–31		2 “
Rotterdam, Holland	March 27–April 3	1 case.	
Matanzas, Cuba	March 17–April 7		16 “
Odessa, Russia	March 20–27	24 cases,	2 “
Hong Kong, China	Feb. 20–March 6		40 “
Trieste, Austria	March 20–27	5 “	1 death.
Yokohama, Japan	March 4–18	70 “	26 deaths.
Zurich, Switzerland	March 20–27		1 death.
Alexandria, Egypt	March 11–18		1 “
Cairo, Egypt	March 11–18		2 deaths.
Bergen, Holland	March 17–24	2 “	1 death.
Moscow, Russia	March 20–27	4 “	1 “
St. Petersburg, Russia	March 20–27	9 “	1 “
Warsaw, Russia	March 20–27		4 deaths.

Cholera.

Calcutta, India	Feb. 28–March 6		125 deaths.

Yellow Fever.

Rio de Janeiro, Brazil	March 6–13	18 cases,	5 deaths.
Matanzas, Cuba	April 1–7		1 death.

Plague.

Formosa, Japan	March 13–23	4 cases.	

The Disinfection of Dwellings in Quebec.—The Board of Health of the Province of Quebec has issued the following circular to local boards, dated April 3d:

"The Board of Health of the Province of Quebec considers that it is very desirable just now to make a large number of observations with a view of determining the degree of disinfection obtained by the methods as actually carried out in routine house disinfection in this Province.

"I have been authorized to examine (gratis) and report upon the effects of disinfectants upon standard test objects, which will be furnished upon application to municipal health officers applying for them. By using these test objects, according to the directions given with them, any one can ascertain whether the bacteria which it is intended to destroy have been actually killed during the disinfection. The advantage of having such tests made will be understood when we consider the important practical results which have followed the routine testing of plumbing and water filtration.

"The special object of the present investigation is to ascertain the relative value of gaseous disinfectants and to see whether the methods generally employed at present always give the results expected of them or whether they require modification.

"In the present state of our knowledge on the subject, it would appear that disinfectant gases, when produced in a room, chiefly act upon the surfaces freely exposed, and that when the infected objects are difficult to penetrate—bedding, etc.—they require for their complete sterilization some form of disinfection chamber, preferably one where a partial vacuum can be obtained.

"Regulations already exist with reference to methods of sulphur fumigation authorized in this Province. Recently inquiries have been made of the board with reference to the efficacy of formaldehyde vapor and the manner in which it should be used. The board takes this opportunity of stating that, while this vapor has very powerful disinfectant properties, yet some of the appliances for producing it have been found quite inadequate, and it also appears likely that in some cases results, apparently successful, have been due to the inhibitory effects produced by minute traces of the disinfectant retained by the test objects and carried over into the culture media. An efficient apparatus should convert at least one quart of methyl alcohol (pure wood spirit, not what is sold as methylated spirits) or evaporate one quart of formalin, respectively, an hour.

"The board will be glad to communicate any information in its possession on the subject of disinfecting apparatus and methods to local health boards. The tendency in the past has been perhaps to place too much reliance on disinfection by gases indiscriminately applied to all sorts of objects and not to insist strongly enough upon treating with disinfectant solutions, or steam under pressure, contaminated articles which will stand this treatment. This special disinfection of the articles which form the chief source of danger is needed in addition to the routine fumigation of an entire apartment or dwelling.

"By order of the board,

"WYATT JOHNSTON, M. D., *Bacteriologist.*"

The following directions accompany the outfits: "The outfits consist of pure cultures of suitable bacteria spread out on smooth surfaces and inclosed in small porous packets. They are suitable for testing the degree of disinfection by sulphur, formaldehyde, and other gases, as well as by steam or dry heat, but are not intended for testing disinfectant solutions.

"*Directions.*—Place packet A (red mark) a few feet from the spot where the disinfectant is generated, leaving it uncovered on a table, chair, etc.

"Place packet B (yellow mark) at a spot in the apartments to be disinfected as far as possible from the source of the disinfectant, leaving it uncovered on a table or chair, etc.

"Place packet C (green mark) in a place where there will be only a slight obstruction to the access of the vapors—*i. e.*, in a pocket of a dress or beneath a cloth or carpet.

"Place packet D (blue mark) so that it will be in a place where the vapors will only penetrate with difficulty—*i. e.*, rolled up in several folds of blankets or placed inside or beneath a mattress or pillow.

"Leave the objects there during the entire time of disinfection. Then replace them in the envelope and send it without delay to the Laboratory of the Board of Health of the Province of Quebec, 76 St. Gabriel Street, Montreal.

"The test objects are impregnated with bacteria which, while themselves harmless, have a resistance to disinfectants equal to that of the common disease bacteria. Unless specially requested, the test objects will not contain spores. They should not be kept for more than three or four days before use. (Do not open the packets.)

"A report upon the result of this test will be sent as soon as it can be decided whether the bacteria have been killed or are still capable of growth."

Dr. Johnston informs us that the idea of using distinctive colors was suggested to him by Dr. W. H. Park, of New York.

The American Laryngological, Rhinological, and Otological Society.—The third annual meeting will be held in Washington, on Saturday and Monday, May 1st and 3d, under the presidency of Dr. Franck Hyatt, of Washington. The programme includes the following titles: The president's address, by Dr. Franck Hyatt; The Nose as a Source of Disease in Other Organs, by Dr. Edward F. Parker, of Charleston, South Carolina; Laryngectomy, with a Case and Specimen, by Dr. Charles W. Richardson, of Washington; Exploratory Opening of the Maxillary Antrum, by Dr. Otto Joachim, of New Orleans; Tracheal Injections in the Treatment of Laryngeal and Pulmonary Inflammations, by Dr. John A. Thompson, of Cincinnati; Labyrinthine Phenomena, Dependent upon Middle-ear Disease, and their Relief by Local Treatment, by Dr. Edward B. Dench, of New York; Chronic Non-suppurative Otitis Media, by Dr. S. MacCuen Smith, of Philadelphia; Headaches from Nasal Causes, by Dr. Sargent F. Snow, of Syracuse, N. Y.; The Indications for the Use of an Artificial Membrana Tympani, by Dr. Thomas R. Pooley, of New York; An Exhibition of some X-ray Photographs, by Dr. John Macintyre, of Glasgow; Local Manifestations of Constitutional Conditions, as Presented in the Mucous Membrane of the Upper Respiratory Tract, by Dr. D. Braden Kyle, of Philadelphia; Papilloma of the Larynx Recurring as an Epithelioma, with a Report of a Case, by Dr. M. R. Ward, of Pittsburgh; Injury to the Middle and Inferior Turbinals in Operation for Deviated Sæptum, with a Report of Two Cases, by Dr. J. A. Stucky, of Lexington, Kentucky; The Cure of Singers' Nodules, and the Exhibition of a Gouty Rhinolith, by Dr. H. Holbrook Curtis, of New York; A Report of Two Cases—Sarcoma of the Larynx, and Sarcoma of the Nasopharynx in an Infant, by Dr. T. H. Halsted, of Syracuse, N. Y.; The Surgery of the Faucial Tonsil, by Dr. G. Hudson Makuen, of Philadelphia; Hoarseness, Aphonia, and Cough: Treatment and Relief by the Galvanic Current, by Dr. T. C. Christy, of Pittsburgh; Report of an Unusual Throat Case, by Dr. Arthur G. Root, of Albany; The Surgery of the Inferior and Middle Turbinated Bodies and Bones, by Dr. Robert C. Myles, of New York; Some Reflections on Hypertrophy of the Lingual Tonsil, by Dr. Francis J. Quinlan, of New York; The Treatment of Suppurative Diseases of the Accessory Sinuses and of the Ear by Ozone Vapor; the Exhibition of the Apparatus for the Generation and Application of the Ozone, by Dr. William Scheppegrell, of New Orleans; A Plea for an Early Operation in Bilateral Abductor Paralysis, by Dr. N. L. Wilson, of Elizabeth, N. J.; A Report of a Case of Abscess of the Nasal Sæptum, by Dr. L. C. Cline, of Indianapolis; Chronic Follicular Tonsillitis, by Dr. W. Scott Renner, of Buffalo; Otitic Brain Disease, by Dr. C. A. Thigpen, of Montgomery, Alabama; and When not to Inflate the Middle Ear, by Dr. Arthur G. Hobbs, of Atlanta.

The Thomas Wilson Sanitarium for Children, Baltimore.—This institution, which is for the care and treatment of children suffering from diseases incident to hot weather, has a very fine cottage hospital ten miles from Baltimore, on the Western Maryland Railroad, and is thoroughly equipped. It has an endowment of $500,000, is free, and takes both mothers and children. It is designed for the benefit of the working people of the city. At present there are accommodations for forty mothers and sixty children. Dr. W. D. Booker, clinical professor of the diseases of children in the Johns Hopkins University, is the chief physician

The Buffalo Academy of Medicine.—A special meeting was to be held on Monday, April 19th, to protest against the proposed changes of civil-service laws affecting boards of health. At the next meeting of the Section in Obstetrics and Gynæcology, on Tuesday, April 27th, the following papers will be read: The Ætiology and Pathology of Abortion, by Dr. C. S. Jewett; The Diagnosis and Treatment of Abortion, by Dr. C. C. Frederick; and A Plea for Uterine Curettage as a Routine Measure after Abortion before the Third Month, by Dr. S. Goldberg.

The St. Louis Medical Society.—At the last regular meeting, on Saturday evening, the 17th inst., Dr. B. Ross was to read a paper entitled Pathologico-histological Notes on Mastitis Glandularis and Mastitis Diffusa Nodosa, and Dr. T. F. Prewitt was to present a case of resection of both hip joints for tuberculosis.

The New York Celtic Medical Society.—At the next regular meeting, on Thursday, April 29th, the order for the evening will be as follows: A paper entitled The Clinical Examination of Children, by Dr. William F. Farrell; scientific communications; presentation of cases; and the exhibition of instruments and specimens.

New York University.—We learn that Dr. William H. Thomson has resigned the chair of practice of medicine.

St. Joseph's Hospital.—Dr. Thomas Manning has been appointed visiting physician to the hospital.

Changes of Address.—Dr. F. Bierhoff, to No. 139 West One-hundred-and-twenty-sixth Street, New York; Dr. Joseph Forrester, from Butler, Pennsylvania, to No. 904 Peach Street, Erie, Pennsylvania.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 11 to April 17, 1897:*

Carter, Edward C., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of two months.

De Shon, George D., First Lieutenant and Assistant Surgeon. The leave of absence granted him is still further extended to include May 1st.

Fuller, Leigh A., First Lieutenant and Assistant Surgeon, will proceed from Fort Meade, South Dakota, to Fort Harrison, Montana, and report for temporary duty at that post during the absence on leave of Carter, Edward C., Captain and Assistant Surgeon.

Glennan, James D., Captain and Assistant Surgeon, is relieved from duty at Fort Sill, Oklahoma Territory, and ordered to Fort Clark, Texas, for duty, relieving Kilbourne, Henry S., Major and Surgeon.

Godfrey, Guy C. M., First Lieutenant and Assistant Surgeon, is ordered by the Secretary of War, as necessary for the public service, to proceed to St. Paul, Minnesota, and report in person to the Commanding General, Department of Dakota, for temporary duty in that department, and when his services shall no longer be required to return to his proper station at Fort Sheridan, Illinois.

McCaw, Walter D., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect upon the arrival at Fort Ringgold, Texas, of Darnall, Carl R., First Lieutenant and Assistant Surgeon.

Reynolds, Frederick P., First Lieutenant and Assistant Surgeon. Upon his return to Fort McIntosh, Darnall, Carl R., First Lieutenant and Assistant Surgeon, will proceed to Fort Ringgold, Texas, and report for temporary duty during the absence on leave of McCaw, Walter D., Captain and Assistant Surgeon.

Smart, Charles, Major and Surgeon, is ordered to proceed to Fort Sill, Oklahoma Territory, at the proper time to accompany Troop E, First Cavalry, on a practice march for the purpose of making a thorough test of the emergency ration recently established by the President, and when his services are no longer required with the command to return to his station in Washington, D. C.

Promotions.

Purviance, William E., First Lieutenant and Assistant Surgeon, to be Assistant Surgeon with the rank of Captain.

Winter, Francis A., First Lieutenant and Assistant Surgeon, to be Assistant Surgeon with the rank of Captain.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Two Weeks ending April 17, 1897:*

Bradley, G. P., Medical Inspector. Ordered to the Mare Island Hospital, May 10th.

Gravatt, C. U., Surgeon. Detached from the Museum of Hygiene, when finished with examination for promotion, April 5th, ordered home, and to hold himself in readiness for sea.

Guthrie, J. A., Passed Assistant Surgeon. Detached from the U. S. Steamer Katahdin and ordered to the U. S. Steamer Alliance.

Leys, J. F., Assistant Surgeon. Detached from the U. S. Steamer Alliance on relief, and ordered to the U. S. Steamer Vermont.

Penrose, T. N., Medical Director. Detached from the New York Hospital, June 5th, and placed on waiting orders.

Stone, E. P., Passed Assistant Surgeon. Detached from the U. S. Steamer Indiana and ordered to the U. S. Steamer Bennington.

Woods, G. W., Medical Director. Detached from the Mare Island Hospital, May 10th, and ordered to the New York Hospital, June 5th.

Baker, J. W., Surgeon. Detached from the United States Steamer Bennington on relief and placed on waiting orders.

Bogert, E. S., Past Assistant Surgeon. Detached from the New York Navy Yard and ordered to the Marine Rendezvous, New York.

DERR, E. Z., Surgeon. The orders detaching him from the United States Steamer Columbia are revoked.

SIMONS, N. H., Surgeon. The orders to the United States Steamer Columbia are revoked and he is placed on waiting orders.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Fifteen Days ending April 15, 1897:*

BANKS, C. E., Surgeon. To inspect service at New Orleans, La., Mobile, Ala., Savannah, Ga., Charleston, S. C., and Wilmington, N. C. April 3, 1897.

McINTOSH, W. P., Passed Assistant Surgeon. Granted leave of absence for one day. April 5, 1897.

STONER, J. B., Past Assistant Surgeon. To proceed on or about April 12th from Savannah, Ga., to Norfolk, Va., for duty. April 2, 1897.

GEDDINGS, H. D., Passed Assistant Surgeon. Detailed to represent Department at Twelfth International Medical Congress, to be held in Moscow, Russia, August 19–26, 1897.

WERTENBAKER, C. P., Passed Assistant Surgeon. Granted leave of absence for three days from April 17, 1897.

OAKLEY, J. H., Passed Assistant Surgeon. When relieved at Philadelphia, Pa., on or about April 8, 1897, to proceed to Savannah, Ga., for duty. April 2, 1897.

PROCHAZKA, EMIL, Assistant Surgeon. When relieved at Delaware Breakwater Quarantine, on or about April 20, 1897, to rejoin station at Reedy Island Quarantine. April 6, 1897.

CUMMING, H. S., Assistant Surgeon. To proceed on April 8, 1897, from New York to Philadelphia for duty. April 2, 1897.

Promotion.

OAKLEY, J. H., Assistant Surgeon. Commissioned as Passed Assistant Surgeon. April 7, 1897.

Society Meetings for the Coming Week:

MONDAY, *April 26th:* Medical Society of the County of New York; Neurological Society of Philadelphia; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *April 27th:* Texas State Medical Association (Paris); Medico-chirurgical Faculty of Maryland (first day—Baltimore); New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Medical Society of the County of Putnam, N. Y. (annual); College of Physicians of Philadelphia (Section in General Medicine); Richmond, Virginia, Academy of Medicine and Surgery; Boston Society of Medical Sciences; Hunterdon, N. J., County Medical Society (Flemington); Litchfield, Connecticut, County Medical Society (semiannual).

WEDNESDAY, *April 28th:* South Carolina Medical Association (first day—Union); Medico-chirurgical Faculty of Maryland (second day); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Auburn, N. Y., City Medical Association; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society; Berkshire, Massachusetts, District Medical Society (Pittsfield—annual); Middlesex, Massachusetts, North District Medical Society (Lowell—annual); Gloucester, N. J., County Medical Society (quarterly).

THURSDAY, *April 29th:* South Carolina Medical Association (second day); Medico-chirurgical Faculty of Maryland (third day).

FRIDAY, *April 30th:* South Carolina Medical Association (third day); Medico-chirurgical Faculty of Maryland (fourth day); Medical Society of Saratoga Springs, N. Y.

SATURDAY, *May 1st:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

LANDRY—GUINAULT.—In New Orleans, on Tuesday, April 20th, Dr. Charles Ferdinand Maxime Landry and Miss Marie Louise Claudia Guinault.

ROBEY—ALEXANDER.—In New York, on Tuesday, April 20th, Dr. William Henry Robey, Jr., and Miss Isabel Torrens Alexander.

VAN SCHAICK—VAN BEIL.—In New York, on Tuesday, April 20th, Dr. George G. Van Schaick and Miss Nanine H. Van Beil.

WILLIAMS—QUINN.—In Holmesville, Mississippi, on Wednesday, April 14th, Dr. George E. Williams and Miss Eva Quinn, daughter of Dr. L. M. Quinn.

Died.

BIDWELL.—In Winsted, Connecticut, on Tuesday, April 20th, Dr. John W. Bidwell, aged seventy-two years.

BRUMAGHAN.—In Fonda, N. Y., on Saturday, April 17th, Dr. Peter A. Brumaghan, in the eighty-third year of his age.

HAMMER.—In Schenectady, on Wednesday, April 7th, Dr. Charles Hammer, in the sixty-sixth year of his age.

FOX.—In Milwaukee, on Monday, April 12th, Dr. William Fox, in the fifty-third year of his age.

MARSTON.—In Cheyenne, Wyoming, on Saturday, April 17th, Dr. John J. Marston.

OTTERSON.—In Brooklyn, on Wednesday, April 14th, Dr. Andrew Otterson, in the seventy-fifth year of his age.

SHIELDS.—In Richmond, Va., on Friday, April 16th, Dr. Charles M. Shields, in the forty-second year of his age.

WHEELER.—In Chelsea, Mass., on Saturday, April 17th, Dr. William G. Wheeler, aged seventy-six years.

WHITTEMORE.—In Cambridge, Massachusetts, on Wednesday, April 14th, Dr. Frederick W. Whittemore.

Book Notices.

Diphtheria and Antitoxine. By NESTOR TIRARD, M. D. Lond., Professor of Materia Medica and Therapeutics at King's College and Physician to King's College Hospital, etc. London, New York, and Bombay: Longmans, Green, & Co., 1897. Pp. vi–141. [Price, $2.50.]

THE author states that this monograph had its origin in sundry papers which he has read before various English medical societies; and with those papers as a basis, the statistics of the reports of the medical superintendents of the Metropolitan Asylums Board, the report of the American Pædiatric Society, and his personal experience in the Evelina Hospital for Sick Children, a careful and comprehensive survey has been prepared of our present knowledge of the causation and spread, the symptoms, the complications and sequelæ, the diagnosis and prognosis, and the general and medicinal treatment of diphtheria.

We are glad to note that in the chapter on the causation of the disease reference is made to the influence of a contaminated milk supply as a distributing agency of diphtheria, and that the recommendation is made that milk should be exposed for five minutes to a temperature of 140° F. before it is used for food.

The author remarks that in the two years previous to the introduction of antitoxine albuminuria occurred in 24.1 per cent. and 28.6 per cent. of the cases in the metropolitan asylums, while in the year in which antitoxine was introduced the albuminuric cases rose to 41.5

per cent. He agrees with Henoch that this symptom of renal complication occurred in about half the cases of diphtheria, and, as a rule, was "merely one of the side phenomena of the disease." He regards the early abolition of the knee-jerk as a useful symptom in the diagnosis of any form of diphtheria. He explains the increase of diphtheritic paralysis which has been stated to follow the antitoxine treatment by the decrease of mortality produced by that substance; "as a larger number of patients survive, a larger number remain to be attacked by diphtheritic sequelæ."

It has been the author's experience that patients who have paralysis of the diaphragm do not die as the result of asphyxia from paralysis of the muscles of respiration, but from sudden cardiac failure or from secondary lung complications.

The author maintains a very conservative position in regard to the value of the bacteriological diagnosis of diphtheria, and it is apparent that the paternalism of the London sanitary authorities does not extend to the matter of exercising official supervision over the physician's private patients. Dr. Tirard says: "The recognition of the disease is mostly to be based upon the recognition of the pseudo-membrane. If time allows for bacteriological investigation, the nature of many cases of doubt may be cleared up by the recognition of the bacillus; but some cases in which the bacillus is found to be present would otherwise give rise to no anxiety, while, on the other hand, in some cases of undoubted diphtheria clinically, the bacillus is sought in vain."

In the chapter on treatment the author makes an important argument in favor of the employment of a trained nurse, and says that in his experience it is extremely rare for the disease to spread from patient to nurse, while the spread from patient to relative is lamentably frequent.

A number of pages are devoted to the consideration of the merits and methods of intubation and those of tracheotomy, and the author concludes that if antitoxine has been employed, it is better to try the effect of intubation before resorting to the more formidable operation of tracheotomy.

He considers that antitoxine has robbed diphtheria of most of its terror, and his experience has convinced him that if it is used sufficiently early and sufficiently boldly there is a prospect of still further reduction in the mortality from diphtheria.

The text is elucidated by well-selected histories of cases, and the volume is a practical exposition of our present knowledge in regard to diphtheria.

The Practice of Medicine. A Text-book for Practitioners and Students, with Special Reference to Diagnosis and Treatment. By James Tyson, M. D., Professor of Clinical Medicine in the University of Pennsylvania, and Physician to the Hospital of the University, etc. Illustrated. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. xvi–17 to 1184. [Price, $5.50.]

Dr. Tyson has been so long and so favorably known as a medical writer that any new work from his pen is sure to receive a kindly welcome and careful consideration. His previous writings have dealt with special subjects, more particularly Bright's disease and urinary analysis. The present volume is much more ambitious in its scope, covering the whole range of medicine, as is indicated by its title.

The general arrangement of subjects is similar to that followed by Osler and other recent writers. There is no introductory matter or any presentation of general pathology. The book opens with a very complete chapter on the infectious diseases in which the latest bacteriological researches are discussed from an ætiological and therapeutic standpoint. The antitoxine treatment of diphtheria is accepted and indorsed without any reservation. The Brand method of treatment of typhoid fever is clearly described and thoroughly advocated. We note that pulmonary tuberculosis is included by the author among the diseases of the respiratory system, although he admits fully the infectious nature of the affection and its dependence upon the tubercle bacillus as a cause. We note also that Dr. Tyson is "opposed to reporting consumption to boards of health because" he thinks it "unnecessary, that nothing is gained by it, and that needless inconvenience, to say the least, is occasioned to victims and their families."

The diseases of the urinary system naturally receive ample consideration from Dr. Tyson, but this subject is not made unduly prominent. A just proportion between the different chapters is preserved throughout the book. The section devoted to the diseases of the nervous system is especially full and satisfactory. The localization of cerebral lesions is discussed in a manner unusual in a work on practice, and is illustrated with numerous drawings after Starr, Ecker, and Charcot.

Dr. Tyson's style of writing is delightfully easy, clear, and attractive. We mention one or two blemishes, such as "mildening of the symptoms" and "a leaky skin," only because we feel sure they will be corrected in future editions. The book is well printed and the volume is in every way worthy of the occupant of the chair of clinical medicine in the University of Pennsylvania.

Clinical Lectures on Mental Diseases. By T. S. Clouston, M. D. Edin., F. R. C. P. E., Physician-Superintendent of the Royal Edinburgh Asylum for the Insane, etc. Fourth Edition. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. xii–727. [Price, $4.75.]

It would be superfluous to speak of the merits of a book which has reached its fourth edition. The reviewer need, accordingly, mention only some of the faults as they exist in this the latest edition of Dr. Clouston's valuable work. They are deficiencies rather than errors, and owe their existence to the changing conditions of investigation and thought.

When the first edition of *Mental Diseases* was given to the public, it was easily first among the text-books on psychiatry published in the English language. Since that time, however, the results of work done in the dead-house, in the clinic, and in the laboratory, and the ever closer growing association of pathological physiology and psychology with the sciences of chemistry, bacteriology, biology, and anthropology, have given a new aspect to mental disease. They have been the subjects of important revision in classification, ætiology, pathology, and treatment. Expressions of these advances are to be found in English in the work of Bevan Lewis and in the translations of the books of Kirchhoff, Régis, and others. With so important a widening of the field of psychiatry, the first place can no longer be held by a book written fifteen or more years ago.

Dr. Clouston's book to-day contains few changes from the American edition of 1884. The classification is still based on symptomatology; the pathological references are meagre and incomplete; the important question of causation is only cursorily considered; there is no mention of the methods or value of hydrotherapy; and under cretinism no reference is made to the thyreoid treatment.

Consequently, in spite of the wealth of clinical facts it records, and in spite of the value of the opinions which are based upon the wide experience of its author, Dr. Clouston's work must be regarded as an incomplete presentation of the subject of which it treats.

It is to be seriously regretted that so excellent a book, written by an alienist so distinguished, should lose its high rank on account of deficiencies which might easily have been supplied.

Injuries and Diseases of the Ear. Being Reprints of Papers on Otology. By Macleod Yearsley, F. R. C. S., Fellow of the British Laryngological, Rhinological, and Otological Association, etc. London: The Rebman Publishing Co., Ltd., 1897. Pp. 40. [Price, 2*s.*]

The author reprints in book form some of his papers published during the past year. These articles were written mainly for the general practitioner, and will interest the family physician who takes the trouble to read them. The titles of the six papers republished in this form are: On an Artificial Membrana Tympani, Foreign Bodies in the Ear and their Treatment, What Not to Do in Diseases of the Ear, The Use of the Pneumatic Aural Speculum, On the Care of the Ear in Children, and On Aural Reflexes. This little book is similar to Dr. C. H. Burnett's *Diseases and Injuries of the Ear; their Prevention and Cure*, published in 1889. The English writer has given us nothing particularly new or that can not be found more amply described in the last-mentioned work.

Principles or Guides for a Better Selection or Classification of Consumptives Amenable to High Altitude Treatment, and to the Selection of Patients who may be more Successfully Treated in the Environment to which they were accustomed previous to their Illness. By A. Edgar Tussey, M. D., Adjunct Professor of Diseases of the Chest in the Philadelphia Polyclinic and School for Graduates in Medicine, etc. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. vi–9 to 144. [Price, $1.50.]

The title of this book tells the whole story. If there is any addition to our knowledge of the treatment of consumption concealed in its one hundred and forty-one pages, there can not be enough to compensate for the effort to struggle through such a mass of useless verbiage.

A First Series of Fifty-four Consecutive Ovariotomies, with Fifty-three Recoveries. By A. C. Butler-Smythe, F. R. C. S. Ed., F. R. C. P. Ed., Senior Surgeon to the Grosvenor Hospital for Women and Children, etc. London: J. & A. Churchill. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. viii–119. [Price, $2.25.]

The title of this book fully declares its contents. The author was a long time in acquiring the experience which he narrates—from 1882 to 1896. Many changes in technics have taken place during that period, the tendency being from the complex to the simple, with cleanliness always as an indispensable factor The technics of ovariotomy and the after-treatment also are so well understood now and have been detailed with such thoroughness by many writers during the past generation that the lesson ought to have been learned, if it was ever going to be. A series of clinical histories is always of value if they are accurate and pointed. We have not observed in this book any suggestions as to treatment which could be fairly considered improvements upon methods already in vogue in this country.

BOOKS, ETC., RECEIVED.

Atlas of Clinical Medicine. By Byrom Branwell, M. D., F. R. C. P. Edin., F. R. S. Edin., Assistant Physician to the Edinburgh Royal Infirmary, etc. Volume III. Part III. Edinburgh: T. and A. Constable, 1897. Pp. 97 to 149.

Clinical Lessons on Nervous Diseases. By S. Weir Mitchell, M. D., LL. D. Edin., Honorary Fellow of the Royal Medico-chirurgical Society of London, etc. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. vii–13 to 305. [Price, $2.50.]

Pioneers of Evolution from Thales to Huxley. With an Intermediate Chapter on the Causes of Arrest of the Movement. By Edward Clodd, President of the Folklore Society, etc. With Portraits. New York: D. Appleton and Company, 1897. Pp. 274. [Price, $1.50.]

Formulaire des médicaments nouveaux pour 1897. Par H. Bocquillon-Limousin, membre des sociétés de pharmacie et de thérapeutique, etc. Avec une introduction par Henri Huchard, membre de l'Académie de médecine, etc. Paris: J.-B. Baillière et fils, 1897. Pp. viii–11 to 308. [Prix, 3 *fr.*]

Winke zur Diagnose der peripheren u. centralen Nervenkrankheiten mit Hülfe der wichtigsten ophthalmologischen Untersuchungsmethoden. Von Charles A. Oliver, A. M., M. D., Augenarzt in Philadelphia. Uebersetzt auf Wunsch des Autors von Dr. Julius Wolff, New York. Wiesbaden: J. F. Bergmann, 1897.

Twenty-seventh Annual Report of the Massachusetts Homœopathic Hospital, Boston, and of the Ladies' Aid Association, for the Year ending December 31, 1896.

The Hunterian Oration. Delivered at the Royal College of Surgeons, February 15, 1897. By Christopher Heath, F. R. C. S., London.

Clinical Lectures delivered at the Hahnemann Hospital, Philadelphia, February 27, 1897. By William B. Van Lennep, M. D. [Reprinted from the *Hahnemannian Monthly.*]

A Report of a Case of Ectopic Gestation Associated with Tuberculosis of the Tubes, Placenta, and Fœtus. By Alfred Scott Warthin, M. D., Ann Arbor, Michigan. [Reprinted from the *Medical News.*]

Fibro-lipoma of the Kidney. By Alfred Scott Warthin, M. D. [Reprinted from the *Journal of Pathology and Bacteriology.*]

The Use of Antitoxic Serum in the Treatment of Diphtheria under the Supervision of the New York City Health Department, with a *Résumé* of the Published Reports on the Subject. By Hermann M. Biggs, M. D., and Arthur R. Guerard, M. D. [Reprinted from the *Medical News.*]

Transactions of the American Association of Obstetricians and Gynæcologists. Volume IX. For the year 1896.

Proceedings of the Academy of Stomatology of Philadelphia. May, 1894, to April, 1896. [Reprinted from the *Dental Cosmos.*]

Transactions of the College of Physicians of Philadelphia. Third Series. Volume XVIII.

Nineteenth Annual Report of the State Board of Health of the State of Connecticut, with the Registration Report for 1895 relating to Births, Marriages, Deaths, and Divorces.

Miscellany.

The New Medical Law of the State of Indiana.—The following is the text of the law as published in the *Medical Free Press*, of Indianapolis, for February:

SECTION I. *Be it enacted by the General Assembly of the State of Indiana*, That it shall hereafter be unlawful for any person to practise medicine, surgery, or obstetrics in this State without first obtaining a license so to do, as hereinafter provided.

SEC. 2. After this law goes into effect any person desiring to begin the practice of medicine, surgery, or obstetrics in this State, shall procure from the State board of medical registration and examination a certificate that such person is entitled to a license to practise medicine, surgery, and obstetrics in the State of Indiana; and in order to procure such certificate the applicant shall submit to the State board of medical registration and examination his diploma, with an affidavit setting forth the time and under what circumstances said diploma was received, and that the affiant is the person to whom such diploma was issued. Such application shall be accompanied by the affidavits of two freeholders resident in the same county in which the applicant resides, stating that the applicant is the person named in the accompanying diploma and application for a certificate. All diplomas received by the board shall be returned to the person owning the same. Such applicant shall pay to said board the sum of six dollars ($6) at the time of making such application. All persons practising medicine, surgery, and obstetrics in the State of Indiana when this law goes into effect, and desiring to continue the same, shall, within ninety days thereafter, obtain a certificate that they are entitled to do so by presenting to the State board of medical registration and examination the license possessed by them at the time of the passage of this law, together with the affidavit that they are the legal possessors of the same and the persons mentioned therein, and such applicant shall pay to the board the sum of one dollar ($1) at the time of making such application. The board shall thereupon issue to such applicant a certificate, which, when presented to the county clerk of the proper county, shall entitle the holder to a license to practise medicine, surgery, and obstetrics in the State of Indiana. In the event an applicant for a certificate from the State board of medical registration and examination shall present a diploma from a medical college which is not recognized as maintaining a sufficiently high grade or standard of medical education as defined and fixed in the records of the board, the applicant shall have the privilege of being examined as to his qualifications to practise medicine, surgery, and obstetrics in such manner as the board shall provide, and if he shall pass an examination satisfactory to the board he shall receive a certificate the same as if he had presented a satisfactory diploma and other evidences of qualifications for the practice of medicine. But if he should fail to pass such examination, he shall be permittted to submit to another examination within twelve months from the time of first examination. He shall pay to the State board of medical registration and examination the sum of twenty-five dollars ($25), fifteen dollars ($15) of which sum shall be returned to him in the event of his failing to pass said examination: Provided, however, that payment of said sum of twenty-five dollars ($25) shall entitle him to a re-examination in case of failure at the first or any subsequent examination: and Provided, further, that if such applicant shall fail to pass the examination prescribed by such board of medical registration and examination, he shall have the right to appeal to the Circuit or Superior Court of the proper county, requiring such board to show cause why such applicant should not be permitted to practise medicine, surgery, and obstetrics in the State of Indiana, upon the applicant giving a good and satisfactory bond, to be approved by the court, to secure all costs of suit should appeal be determined against him. Upon the receipt of the certificate by the applicant from the State board of medical registration and examination, the applicant shall, upon the presentation thereof to the clerk of the county in which he resides, receive from the county clerk a license to practise medicine, surgery, and obstetrics within the State of Indiana. The person receiving such license shall pay to the county clerk fifty cents ($0.50) as his fee for issuing and recording such license, as hereinafter provided. In case of change of residence from one county to another within this State, the holder of a physician's license shall obtain a new license in the county where he proposes to reside, by filing with the county clerk the license obtained by him in the county in which he last resided, in the same manner as provided for on the presentation of his certificate from the State board of medical registration and examination, and the clerk shall issue him a new license.

SEC. 3. It shall be the duty of the clerk of the county in which an applicant resides to issue to the person presenting such certificate, as hereinbefore provided for, a license under his official seal in the following form:

STATE OF INDIANA, }
COUNTY OF........ } SS.:

I, ..., Clerk of the Circuit Court of....... County, in the State of Indiana, do hereby certify that ....has complied with the laws of the State of Indiana relating to the practice of medicine, surgery, and obstetrics in the county and State aforesaid.

Witness my hand and seal of said court this....day of......, 189..

...................., Clerk.

The county clerk shall enter of record the name, age, place, and birth, address, school or system of medicine to which said applicant belongs, and the person so registering shall subscribe to and verify by oath before such clerk an affidavit concerning such facts, which, if willfully false, shall subject the affiant to conviction for perjury. The county clerk shall furnish annually, on the first day of January, to the State board of medical registration and examination, upon blanks furnished by said board, a duplicate list of all certificates received and licenses issued by him during the preceding year, and shall include therein the date of issue of said license and the name, age, and residence of the person receiving the same.

SEC. 4. Within thirty days after this law goes into effect it shall be the duty of the Governor of the State of Indiana to appoint a State board of medical registration and examination, composed of five (5) members, who shall serve, two for one year, one for two years, one for three years, and one for four years, and their successors for a term of four years each. No school or system of medicine shall have a majority representation on such board. Said board shall be non-partisan, and not more than three shall be members of any one political party. The Governor shall select members of said board of medical registration and examination from reputable physicians in this State who are graduates of any college of medicine of good repute: Provided, that no professor or teacher in a medical college shall be appointed as a member of said board: Provided, further, that each of the four schools or systems of medicine having the largest numerical representation in the State shall have at least one representative on said board. Should a vacancy occur in said board by death, resignation, removal, or otherwise, then it shall be the duty of the Governor to fill the vacancy from the school or system entitled to representation by virtue of such vacancy. The Governor shall have the power to remove any member of said board for incompetency, gross immorality, for any abuse of his official power, or for other good cause, and may fill any vacancy thus occasioned by appointment. Any person appointed to fill any vacancy on such board, whether occasioned by death, resignation, removal, or otherwise, shall hold for the unexpired term of the member whose place he is appointed to fill.

Sec. 5. It shall be the duty of the members of the State board of medical registration and examination to meet in the city of Indianapolis within thirty days after their appointment and organize by the election of a president, secretary, and treasurer, who shall serve until the second Tuesday in January following, and their successors shall be elected on the second Tuesday in January annually thereafter. The said board shall hold regular meetings on the second Tuesday in January, April, July, and October of each year, and as often in addition as may be necessary for the transaction of such business as may properly come before it under the provisions of this act, and shall have power to make all necessary rules and regulations for the transaction of its business. For their services the members shall receive the sum of ten dollars ($10) per day, and their traveling expenses necessarily incurred in attendance upon such meetings. It shall be the duty of said board to keep a record of all applications for certificates, and such record shall contain all the facts set forth in such applications, including the action of the board thereon, and the said board may employ a clerk and fix his salary at not more than one thousand dollars ($1,000) per annum. It shall be the duty of the treasurer of said board to pay quarterly all moneys received by the board to the treasurer of the State, which moneys shall be credited to a separate and permanent fund for medical registration and examination, which is hereby created. All moneys so paid to the treasurer of the State shall remain and be a separate and permanent fund for the maintenance of the said board of registration and examination. The said board shall, by its president and secretary, from time to time, certify to the auditor of State the necessary expenses incurred by the said board, including the salaries and per diem of the members, and the auditor shall issue his warrant for the same, which shall be paid out of the fund so established for the maintenance of the said board: Provided, that no order shall be drawn by any State official on any fund other than the above-named fund for any salaries, printing, or stationery, or other expenses incident to the administration of this act. The treasurer and secretary of said board shall each give bond in the sum of ten thousand dollars ($10,000) with sureties, to be approved by the Governor, which bonds shall be filed with the auditor of State. The members of the State board of medical registration and examination are authorized to administer oaths in matters relating to the discharge of their official duties. The State board of medical registration and examination is charged with the duty of enforcing this act, and it shall be the duty of the prosecuting attorney, upon the complaint of the board, to prosecute any violation of this act. The State board of medical registration and examination shall, from time to time, establish and record in a record, kept by them for that purpose, a schedule of the minimum requirements which must be complied with by applicants for examination for license to practise medicine, surgery, and obstetrics, before they shall be entitled to receive such license. The said board shall also, in like manner, establish and cause to be recorded in such record a schedule of the minimum requirements and rules for the recognition of medical colleges, so as to keep these requirements up to the average standard of medical education in other States. After the year 1897 no change shall be made in such schedule of requirements in any year, after the month of January of each year, nor shall any change be made to have any retroactive effect, or that shall affect students theretofore matriculated. Such record shall at all times be open to examination by the public, and the said schedules of requirements, after they have been established and recorded, and all changes made therein, shall be printed in circular form and mailed to all medical colleges in the State, and shall also be furnished to any person upon application. Said board shall not, in the establishment of the aforesaid schedules of requirements, discriminate for or against any school or system of medicine, nor shall it prescribe what system or systems, or schools, of medicine shall be taught in any of the colleges, universities, or other educational institutions of the State. It shall have power to make and establish all necessary rules and regulations for reciprocal recognition of certificates issued by other States, and to prevent unjust and arbitrary exclusions by other States of graduates in medicine from this State, who have filled its requirements. When an application for a certificate is made and a diploma submitted, as herein provided, it shall be the duty of the State board of medical registration and examination to determine, upon the evidence presented, whether such diploma rightfully belongs to and was issued to the person making application for a certificate, and whether the medical college that issued the diploma maintains a standard of medical education conforming to that fixed by the State board of medical registration and examination, and whether the application otherwise complies with the rules of the board. If these facts are shown by competent evidence, it shall be the duty of the State board of medical registration and examination to issue a certificate, signed by its president and secretary, and under its official seal, stating that the person applying for such certificate and possessing such diploma is entitled to a license to practise medicine, surgery, and obstetrics in the State of Indiana. The State board of medical registration and examination shall have the right to review the evidence upon which a license has been obtained, and if it shall be found that a license has been obtained by fraud and misrepresentation, the board may revoke such license. The board may refuse to grant a certificate to any person guilty of a felony or gross immorality, or addicted to the liquor or drug habit to such a degree as to render him unfit to practise medicine or surgery, and may, after notice and hearing, revoke a certificate for like cause. An appeal may be taken from the action of the board. If any person holding a license under the provisions of this act shall be guilty of any of the above-enumerated acts, the license of such person may be revoked by the board, upon a finding and judgment as hereinafter provided that the holder thereof has been guilty of any of the above-enumerated acts. A specific written charge, verified by affidavit, must be presented to the board, making definite and specific charges of such offense against the holder of such license. It shall thereupon be the duty of the board to refer such verified charge to the circuit court of the county in which the holder of such license resides. The clerk of such court shall thereupon docket the same as a cause pending in said court. The said verified charge shall be treated as a complaint, and summons shall issue thereupon to the accused, as in ordinary civil cases. The accused may appear and plead to said charge, and issues may be formed thereon, as in civil cases, which shall thereupon be tried by the judge of said circuit court. It shall be the duty of the prosecuting attorney of said circuit to appear in such causes and represent the board. The only finding and judgment in such causes shall be guilty or not guilty as to each charge. The judgment of the court upon such charges shall be at once certified to the board by the clerk of said court. If the finding of the court is "guilty" as to any one of said charges, said board may thereupon make an order revoking such license. If judgment of "guilty" is awarded in such causes, the costs of such proceeding shall be recovered of the accused and a fee of ten dollars shall be taxed therein in favor of the prosecuting attorney.

Sec. 6. All persons practising midwifery in this State, and who have practised it for ten years last preceding the passage of this act, and desiring to continue the same, shall, within ninety (90) days thereafter, make application to the State board of medical registration and examination by submitting an affidavit, fully attested, giving the name, age, residence, the length of time during which, and the place or places at which, the applicant has been engaged in such practice, and the special education, if any, which the applicant has received for such practice. Such application shall be accompanied by the affidavits of two freeholders, duly attested, that the applicant is known to them as the person applying for a certificate to practise midwifery, and that such applicant has been engaged in the active practice of midwifery, giving the location or locations of such practice for at least ten (10) years previous to the passage of this act. Upon such application and the payment of one dollar ($1) the State board of medical registration and examination shall issue to the applicant a certificate, which shall, when presented to the county clerk, entitle the holder to a license to practise midwifery in this State. All persons desiring to enter upon the practice of midwifery in this State after this law goes into effect, shall present to the State board of medical registration and examination their diplomas, duly attested, and procured from an obstetrical school of such standing as shall be recognized and determined by the board; or shall submit to such examination in midwifery as the board shall require, and pay a fee of three dollars ($3). Such evidence of qualification being satisfactory to the board, it shall issue a certificate entitling the holder to a license from the clerk of the county in which the applicant resides, which license shall entitle the holder to practise in midwifery in this State. The license thus issued shall conform to all requirements of registration imposed upon physicians' licenses in section 2 of this act, and shall be subject to revocation for the same causes as provided in section 5 in case of license to physicians.

Sec. 7. Nothing in this act shall be so construed as to discriminate against any school, or system, of medicine, or to prohibit gratuitous services in cases of emergency, or to the administration of family remedies. This act shall not apply to any commissioned officer of the United States Army, Navy, or Marine-Hospital Service in the discharge of his official duties; nor to any physician or surgeon residing on the border of the neighboring State, and duly authorized to practise under the laws thereof, whose practice extends into the limits of this State: Provided, that such practitioner shall not open an office or appoint a place to meet patients or receive calls within the limits of this State. This act shall not be construed to prevent medical students from practising medicine and surgery under the immediate and direct supervision of a licensed physician, nor shall it apply to legally qualified dentists when engaged in the exclusive practice of dentistry, nor to any optician who shall hereafter engage in the practice of optometry in this State at the time and prior to the passage of this act.

Sec. 8. To open an office for such purpose, or to announce to the public in any way a readiness to practise medicine in any county of the State, or to prescribe for or to give surgical assistance to those suffering from disease, injury, or deformity, shall be to engage in the practice of medicine within the meaning of this act.

Sec. 9. Any person who shall practise medicine, surgery, or obstetrics in this State without having a license duly issued, as hereinbefore provided, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be fined not less than twenty-five dollars ($25) nor more than two hundred dollars ($200).

Sec. 10. All laws and parts of laws in conflict repealed.

The Pathology and Interrelation of Various Manifestations of Chronic Inflammation in the Nose.—At a recent meeting of the Laryngological Section of the New York Academy of Medicine Dr. Jonathan Wright read a paper on this subject.

Chronic inflammation of the nasal mucosa was a slow process, he said, modified in a hundred ways by external and internal influences, by climate and occupation, by systemic dyscrasiæ and racial peculiarities, by local configurations and concomitant lesions, by sex, and by age. Its clinical manifestations were usually considered under many different heads. Nasal polypi and polypoid degeneration, ethmoiditis, sinus inflammations, hypertrophic rhinitis, vascular hypertrophies, bony cysts of the middle turbinate, spurs, and deviations were merely manifestations of the same process modified by fortuitous circumstances and differences in the configuration of different regions and in the structure of the mucosa and its underlying cartilage and bone. Attention had been riveted so intently first upon one clinical division and then upon another that we had in some instances got a little at sea because we had not kept in mind the pathology which underlay them all, bound them together, and furnished missing links in their ætiology. Vasomotor excitability, he said, was an indispensable factor, which arose from local or reflex or systemic causes, such as coryza or dust, dyspepsia and constipation, rheumatism and gout, and supplied the overnutrition to the tissues which led to the changes in the mucosa.

In the region of the inferior turbinated bone, especially at its posterior and inferior border and at the adjacent parts of the sæptum, there was a thick vascular mucous membrane covering a well-defined periosteum, which in turn covered a firm bony structure. The walls of the venous sinuses and the surrounding stroma were well supplied with unstriped muscular fibres.

Dr. Wright said, regarding the hypertrophies at the posterior ends of the inferior turbinated bones, which presented a mamillated or mulberry surface, that it was possible to trace all degrees of this furrowing of the surface up to a condition which, to the naked eye, bore a close resemblance to true papilloma. How this occurred was a matter of considerable interest. Doubtless there was a continuous growth of fibrous tissue in these ridges and processes, but evidently the form it took was dependent largely upon the dilatation and collapse of the erectile tissue. Normally, the fibrous tissue was largely made up of curling fibres, which had the power of diminishing the volume of the mass regularly when vasomotor contraction drove the blood out of the venous sinuses. In the unstriped muscular fibres scattered through this stroma there was a powerful adjuvant to this physiological action. In a posterior body distended by blood, when there was no fibrous hypertrophy present, a smooth surface would be seen. In a few minutes vasomotor contraction might suddenly occur and the engorged tissue collapse. Then in the post-nasal mirror little rugæ would be seen on the surface. Even in the normal state a slight folding occurred. When the fibrous hyperplasia had decidedly advanced, it would be found that the elastic fibres had lost their characteristic appearance; that they had been replaced by or metamorphosed into long, straight ones of low organization; that the unstriped muscular tissue had largely disappeared; and that the surface epithelium was somewhat metamorphosed, and the number of its layers was increased. After these changes began collapse became more or less incomplete, but the furrows grew deeper by reason of the growth of the fibrous tissue. The vascular dilatation increased in the deep vessels, but near the surface, on account of the constricting action of the pressure of the growing fibrous tissue, the smaller network became more or less obliterated, and there was an inert mass blocking up the inferior meatus. This result of chronic inflammation might be observed in the nose wherever there existed the so-called erectile tissue. In places on the sæptum, varying in different individuals as to amount and exact locality, the erectile tissue might also frequently been found, as well as upon the inferior turbinated bone. Dr. Wright called attention to another important observation in studying these vascular hypertrophies, which was that the tissue in the large growths of long-standing cases looked, *in situ*, translucent and watery, the color being either pale or dark red. This, he said, when snared off, would be seen to exude a watery secretion as it contracted. On microscopical examination, œdematous areas, similar in structure to the mucous polypi of the middle turbinated, would be seen. These areas were usually observed at the periphery of the lobules, close beneath the epithelium. These were links in the pathology which connected vascular hypertrophies of the inferior turbinated with œdematous conditions of the middle turbinated bone, the varying preponderance of the different manifestations of chronic inflammation depending upon variations in the anatomy of the mucosa. There were also certain differences in the character of the hyperplasia and degeneration of the fibrous tissue of the mucous membrane, according to the age of the patient. In people past forty-five it would be seen that the fibrous-tissue fibres were losing their outlines, and that large areas of hyaline-looking or structureless material were appearing as the result. The older the patient the more marked was this appearance. The same change was seen also to some extent in younger subjects of low vitality.

Bone disease, said Dr. Wright, was usually more frequently observed and more pronounced in the ethmoid and its process, the middle turbinated bone, than elsewhere, but in extensive disease of the mucosa of the inferior turbinate osteophytic deposits were found along the lower border of the bone when small portions were removed surgically, and they might frequently be observed in anatomical preparations of the skull, being evidently due to the involvement of the periosteum in chronic inflammation. In ordinary ecchondroses of the sæptum, which should be carefully distinguished from dislocations and curvatures, there was nearly always thickening of the mucosa which covered them. Microscopically, there were evidences also that the inflammation had spread through the mucous membrane to the perichondrium and that there was an analogous deposit of cartilage cells. These cartilage cells had nearly always changed, to some extent, to bone. On the bony sæptum in exostoses there was a similar proliferation of bone. Dr. Wright was convinced that sæptal deviations and curvatures were due, to some extent, to this supernutrition causing growth in the vertical and horizontal diameters of the plane of the sæptum.

Not only was vasomotor excitability a connecting link in the ætiology of the fibrous and vascular hypertrophies of the lower nasal regions, but it also played an important part in the production of œdematous nasal polypi. In hay fever the vasomotor derangement originated largely in some vice of the central nervous system. So far as he has been able to study the history of these cases, the author stated, chronic nasal occlusion rarely antedated the first attack of hay fever. Nasal polypi, when present, were rarely found until the patients had suffered from two or three attacks, usually not until after many seasons. A prominent symptom of hay fever was the watery nasal discharge during the attacks. This serous fluid came directly by transudation from the dilated blood-vessels. The mucous membrane was waterlogged; it was pale, though swollen and sodden. If it was examined under the microscope, Dr. Wright said, we should be struck with the close similarity of the structure to that of the ordinary nasal polypus. When the autumnal frosts came the condition subsided, and in many cases a fairly healthy mucosa was presented; at least there was no suggestion of polypi in many of them. The vessels were able to regain their tone and to hold within their walls the serum of the blood. After a number of attacks they gradually lost their power. After the vasomotor excitement subsided a little œdema still remained. This increased and, together with a few other changes of the normal structure, such as the decrease in the number of the glands, thickening of the epithelium, etc., there was a gradual development of an œdematous rhinitis and the formation of pendent areas which were called mucous polypi. In many cases of hay fever Dr. Wright believed this to be the sequence of events. In how many this occurred he could not state positively, but certainly it did not in all. He believed that the nasal polypi which often accompanied hay fever were in many cases neither the cause of it nor a coincidence, but the result of it.

So far as he knew, there existed in rhinological literature no satisfactory report of a case of nasal myxoma in which the pathological histology established the diagnosis. He had examined nearly a hundred of these growths microscopically. Others in the aggregate had examined thousands. Hence he believed we were justified in thinking that true myxoma did not occur in the nose.

The mucous membrane on and above the middle turbinated bone was less vascular than in the region of the inferior; the epithelium was more delicate and was supplied with cilia. There was not so much fibrous tissue and the periosteum was less dense. The bone itself was made up of delicate branching plates lined on both sides with mucous membrane the deep layers of which in places communicated with one another through spaces in the bone. In a previous paper dealing with the vascular mechanism of the nasal mucosa, Dr. Wright had shown how the deep radicle arteries and veins entered the nasal chambers together through the same bony canals, so that vasomotor dilatation of the artery not only let in more blood to the mucosa, but, by encroaching on the neighboring vein, compressed it and thus obstructed the venous return. A permanent dilatation of the artery by vasomotor paresis, usually dependent upon chronic inflammation, brought about a condition of engorgement of the deep sinuses in the erectile tissue of the inferior turbinated body. In the mucosa of the middle turbinate, however, the same condition was favorable to the exudation of the watery parts of the blood from the thin-walled peripheral vessels. The formation of inflammatory deposits of a cellular or fibrous or bony character would produce the same result, for the walls of the deep veins, though sparsely supplied with muscular fibres, were thin and very much more compressible than the thick, muscular walls of the arteries. In the normal mucous membrane in a young animal or in an infant there was strong evidence that more or less of this exudation went on normally. The nuclei of white cells, without the cell bodies, were washed through or between the endothelial cells of the vessels into the stroma, and through the epithelial lining of the glands and of the surface. In places the cilia of the surface epithelium was crowded with these nuclei, which were really only cellular detritus.

In the nose the gelatinous mucous polyp was produced by inflammation only when some one or more of the causes mentioned brought about chronic congestion of the parts and the effusion of an abnormal amount of serum. Some hyperplasia of the stroma, some degenerative changes in the glands took place, and the surface epithelium occasionally became thickened and metamorphosed into flat cells in places. All these changes not only prevented the reabsorption of the serum, but, to some extent, prevented it from exuding at the surface.

The bone normally contained abundant areas which were filled with delicate connective tissue producing the osteoblasts and osteoclasts which lined the bone. In some places small cavities had been shut off from communication with the surface, and these tiny cavities, analogous in the middle turbinate to the larger bone cells of the body of the ethmoid, were lined with cylindrical ciliated epithelium. From the general character of the normal ethmoidal structure we might understand the changes which might occur in chronic inflammation. In the first place, the bone tissue might be greatly increased in amount by the excessive activity of the osteoblasts. Accompanying this, almost invariably, some rarefaction was caused by the activity of the osteoclasts. When this process occurred in the walls of these small bony cavities an increase in their diameter followed, the osteoblasts depositing bone salts and forming bone cells, and the osteoclasts along the inner surface absorbing bone salts and disintegrating bone cells. Histologists, said Dr. Wright, stated that osteoblasts were converted into osteoclasts, and, inversely, that osteoclasts might be converted into osteoblasts. They were cuboidal in shape and evidently grew from the connective tissue. These patches of connective tissue lying in the bone and communicating frequently with that external to it were known ordinarily as the Howship lacunæ of bone.

Dr. Wright thought it was a curious clinical fact, of which histology had as yet given no adequate explanation, that the very great majority of cases of atrophic rhinitis occurred in young women. It was also a curious fact that pure fibroma in the nasopharynx was almost exclusively found in young men. These facts were analogous to those observed in the bony cysts.

Nearly all the cases of bony cyst of the middle turbinate had occurred in women. The reason for this influence of sex in the ætiology could probably be discovered only by keeping the pathology constantly in mind. The pathological process might not only enlarge a small closed cavity in the middle turbinated bone, but also act in the same manner in the prolongations into it of the cavities from the body of the ethmoid. Dr. Wright exhibited specimens in which communication with the cells of the body of the ethmoid was observed, and the question might naturally arise, he said, as to whether this was not always the case. Usually only a portion of the cyst wall was removed, and it was impossible to assert that a communication did not exist with the cavities above.

In regard to the serous œdema of the mucous membrane, it naturally followed that the effused serum tended not only to infiltrate the subepithelial stroma, but to extend through it and with it into the substance of the bone, and, by pressure, to cause dilatation, absorption, and granular disintegration of the bony structure. Then there was the clinical condition of ethmoiditis. Woakes's error lay in supposing that the inflammatory process originally began in the bone, in calling the bony changes a necrosis, and in terming the œdematous structure myxomatous, but to him rightly belonged, as Hajek urged, the credit of having drawn attention to the importance of these bone changes, and of the proper understanding of much that was confusing in nasal pathology. This process was usually confined to the middle turbinate, but sometimes it extended higher up into the cells of the ethmoid body. Secretions there became infected and purulent, and there was the dangerous, but fortunately rare, form of inflammation which was known clinically as empyema of the ethmoid sinuses. It was this clinical difference in the two sets of cases, Dr. Wright said, which had led to the apparent difference in the experience of observers as to the frequency of the occurrence of purulent ethmoiditis. It was frequently observed in the middle turbinate, but it was much rarer in the ethmoid sinuses than purulent inflammation of the maxillary sinus. It was this occurrence of serous infiltration in inflammations of the mucosa of the middle turbinate region which caused the frequent association of ethmoiditis, mucous polypi, and cysts of the bone.

Chronic inflammation with œdema might spread to the mucosa of the other sinuses and by obstructing their outlets cause a purulent infection. On the other hand, purulent inflammation might start first in the frontal or maxillary sinuses and by its ichorous discharges set up an inflammation of the intranasal mucosa around the hiatus semilunaris, with the formation of polypi. It was known from clinical observation that nasal polypi would promptly disappear from the nasal chambers or cease to recur after removal when associated with empyema of the antrum, if the latter was drained by an opening from below. Finally, all the lesions mentioned were occasionally seen simultaneously in the nasal chambers of an individual.

Secondary Rashes in Scarlet Fever.—In the March number of the *Bristol Medico-chirurgical Journal* Dr. J. O. Symes remarks that these rashes during the convalescent stage of scarlet fever are by no means of uncommon occurrence, and that they should not be confounded with the true relapse in which the patient passes again through all the stages of the first attack.

The true secondary rashes are, he says, of more importance, as they frequently indicate the beginning of a period fraught with grave danger to the patient. The author refers to cases of exceptional severity which were reported by Mr. Manning in an article in the *Lancet* for August 13, 1892. The attacks began during the second and third weeks of convalescence, and were fatal in many cases. As is indicated by the title of Mr. Manning's paper, Skin Eruptions which Occur in Septicæmia following Scarlet Fever and Diphtheria, Dr. Symes thinks there was evidently an element of septic poisoning, probably from the throat.

Secondary rashes may be erythematous, urticarial, eczematous, papular, or hæmorrhagic, and the author describes ten cases which came under his observation, illustrating these varieties.

Most of the rashes, he says, appeared in or about the third week of the illness, and almost invariably in those patients in whom the initial throat symptoms had been of more than average severity. Although the appearance of the skin lesions frequently coincided with a recrudescence of amygdalitis, he does not think it likely that they were the result of septic absorption from the fauces. In some of the cases no amygdalitis was observed; in none of them was there ulceration or sloughing; while in others the rash preceded the appearance of tonsillar trouble. The more probable explanation, he thinks, would appear to be that there is about the third week a critical period during which certain products of the disease are being eliminated, and that in this process the organs engaged are apt to suffer. In the digestive system such disturbance is marked by diarrhœa and vomiting, and in the kidneys by nephritis and albuminuria, the latter of so slight a nature, perhaps, as to be disregarded. The lymphoid tissue of the tonsils and the lymphatic glands are noticeably excitable, and, as would be expected, that great excretory organ, the skin, is frequently affected. The septic rashes described by Manning were accompanied by much wasting, and the mortality was very high, but in none of the cases referred to was there wasting or any other of the symptoms usually associated with septicæmia, and none of them ended fatally. Dr. Symes cites Mahomed, who observed that in scarlet fever there were certain changes which were of constant occurrence between the eighteenth and twenty-second days of the illness. These were a rise of arterial tension, a diminished excretion of urine and urea, a rise of temperature, albuminuria, otorrhœa, adenitis, and diarrhœa. He makes no mention of secondary rashes, and, Dr. Symes says, the subject has received but little attention. There can, however, he continues, be no doubt that their presence is far from uncommon; they would be still more frequently observed were they diligently inquired for. The rash is so frequently the precursor of grave complications that great importance should be attached to its detection. By so doing we are enabled to change the diet and habit of life of the patient, and by a free use of such drugs as calomel and potassium bitartrate we may hope, as Mahomed has shown, to ward off or minimize a threatening attack of nephritis, or other complications.

A Case of Ptomaine Poisoning from Eating Turkey.—Mr. E. S. Worrall relates the following case in the *British Medical Journal* for April 3d: On February 15th he was called to see a woman whom he found in a collapsed condition, cold, and clammy; the pulse was 75 and the pupils were contracted. There were no signs of injury from a fall or a blow, no typical smell in the breath, and nothing in the room to account for her condition. Mr. Worrall ascertained that the patient had not been well on the previous day; that she had complained of pain in the abdomen, and had vomited three times. On the morning of the 15th there had been vomiting and diarrhœa, with pain in the abdomen. She had taken no food whatever that day, only a little coca wine in the morning and a little brandy and water at noon, which had immediately afterward been vomited. Further inquiry elicited the fact that all the family had been sick after eating turkey, and that the patient had eaten very freely of the gravy made from the giblets. The same symptoms had occurred in all.

Mr. Worrall administered an emetic to the patient, and another in fifteen minutes, but they did not act, and a stomach tube was at once introduced and the stomach well washed out with warm water, not much returning but the water and a little mucus. Mr. Worrall thought there was little doubt that the trouble was due to poisoning by ptomaines from eating the turkey, which at the time of the preparation had appeared to be all right, although at the table an unpleasant smell had been noticed. Hypodermics of ether, etc., were administered to the patient, but she could not be aroused and she remained quite unconscious. She breathed quietly and the abdomen was not distended; the pupils were moderately dilated and did not react to light; the conjunctival reflex was absent. Hypodermic injections of ether and strychnine were kept up, and nutrient enemata of peptonized gruel were administered. Reaction had now set in. The temperature was 101.6° F. in the axilla, and the pulse was 136. The large intestine was repeatedly washed out with warm boric-acid lotions, but the patient remained comatose until death occurred, on February 17th.

Mr. Worrall thinks that the course of this case clearly indicates poisoning by food. There was the partaking of tainted food, which affected all the members of the household, some more than others. In the patient who died there was at first the combination of *malaise*, weakness, and gastro-intestinal symptoms which usually accompany food poisoning. These were, however, not accompanied by fever. This appeared later, and with the more severe symptoms, he says, may be taken to indicate bacterial poisoning as distinguished from chemical poisoning.

The Prognosis and Treatment of Typhlitis.—In the *Intercolonial Medical Journal of Australasia* for February 20th Dr. James Jamieson remarks that there is hardly any diseased condition known in which the practitioner who is not in any special way a surgeon often feels himself in greater difficulties than in framing a diagnosis, which will also cover a prognosis, in cases of inflammation of the vermiform appendix. The prognosis must ultimately depend on a good and full diagnosis, in all sorts of conditions; but it does not follow in many of them that the question of treatment, very active on the one hand or practically expectant on the other, stands in the same relation of close dependence. Where a man has made up his mind that operation is called for whenever the diagnosis of appendicular inflammation has been made, there need be no trouble; but there are many who have not yet been able to accept the doctrine that there is little or no danger attendant on laparotomy, and even surgeons of authority and experience are not quite agreed.

Dr. Jamieson thinks that if a satisfactory classification of cases and of the forms of the disease could be definitely obtained, the difficulty and responsibility would be lessened. But in many cases, he says, there can be little better than supposition concerning the actual pathological condition leading to the symptoms; and even with "appendicitis" accepted as a descriptive term, there may be very different causes at work.

Regarding prognosis and treatment, there may be said to be two schools, the medical and the surgical, with extremists on each side, as well as others who occupy a middle position. Dr. Jamieson cites Mr. Mayo Robson (*British Medical Journal,* December 10, 1896), who states that it may sound somewhat radical, but he is convinced after considerable experience that the early operation undertaken as soon as the disease is diagnosticated, first advocated by Dr. McBurney, would lead to a far greater percentage of recoveries than the method of individualizing, which in England is still adopted, and seems likely to be continued.

On the other hand, Dr. Jamieson goes on to say, what might be called the physician's view of the question is stated just as strongly by Mr. Thornley Stoker in an article in the *British Medical Journal* for June 1, 1895, in which he says that observation has taught him that operation in acute typhlitis is highly fatal, and should be resorted to only in very exceptional cases. Referring to Mr. Treves's opinion, that the number of cases in which there has been only one attack is much greater than that in which there have been recurrences, continues Dr. Jamieson, Mr. Stoker goes on to say: "Once we allow that persons who suffer from single attacks are much more numerous than those who suffer from relapses, we have found the strongest reason, in the face of the fatality of laparotomy in the acute stage, for using every other reasonable means. I have rarely seen a case of acute typhlitis in which the large bowel was not full of old fæces, and I have still more rarely seen a case, in which the colon could be unloaded, in which recovery did not take place."

It is hardly to be wondered at, Dr. Jamieson thinks, that those who are not surgeons should hesitate to accept teaching which has as its purport that it is always right to operate in cases of typhlitis. The author himself admits having passed through somewhat varying phases of opinion on the subject, and he is willing to concede more to the surgeon than is allowed by many of his medical colleagues.

The question of prognosis, he says, from the physician's point of view, is that of whether the case under observation is one in which general measures may be tried or continued, or whether the symptoms are such as to call for surgical interference with as little delay as possible. Dr. Jamieson finds it difficult to lay down any general rule, but, so far as he has been able to do so for his own guidance, it is to the following effect: So long as pain remains well confined to its original seat, there is no need for haste; but if it extends to some other part of the abdomen, even if it be not actually generalized, there should be no delay in the adoption of operative procedures. Almost every one will admit that when pain becomes diffused, with distention and other signs, and particularly pulse signs of general peritonitis, delay is dangerous. The special value of this rule lies in the insistence on the fact that extension beyond the original seat of pain and tenderness is a note of warning, even though there may be abatement of symptoms at that seat, with even some improvement in the general condition. And it is of importance to bear in mind that, if the primary seat in the great majority of cases is at or near McBurney's point, it is not always so. The appendix varies considerably in length, so that its tip may be well to the left of the middle line, and not very far above the pubes. In that case, the first seat of pain and tenderness may be quite away from McBurney's point.

Pain, not uncommonly, is severe in the right loin, and may be due either to location of the appendix behind the cæcum, or to inflammation extending in the loose tissues behind—the paratyphlitis of the older nomenclature. These cases often tend to run a rather chronic course, and to end in the formation of an abscess. The author thinks it is doubtful if an early operation is often advantageous, and adds that the use or avoidance of purgatives or large enemata as substitutes is perhaps the most important point to be weighed.

When acute general peritonitis is set up, he says, no benefit can be expected, and certainly not when there has been perforation. But when there is a history of previous constipation, when the pain and tenderness are distinctly localized, and the swelling is moderate in amount and well circumscribed, Dr. Jamieson believes there is often a mistake made in temporizing timidly with mere local applications and mild opiates. If the bowels can be cleared of irritating matter and their function regulated, we may succeed in removing an important cause of the sudden attack of inflammation in the appendix and cæcum, and so bring the case to a quick ending. We must recognize that to some extent we are in the dark as to the previous existence of latent appendicular disease. But in the absence of signs of extending peritonitis, it is not easy to see that there should be risk from the mere setting up of intestinal peristalsis. And with the removal of a local source of irritation, and consequent lessening of inflammation and swelling, an opportunity may be given for the appendix to discharge any distending and irritating material through its narrow opening into the bowel. Large enemata may first be tried, and if any improvement follows their use, there will be some encouragement to try some mild laxative, such as castor oil or calomel, in repeated small doses, with belladonna as an accompaniment. Salines, if rather more severe, may be even more effectual in a suitable case. Local applications, in the shape of poultices or fomentations, are certainly harmless, and at least serve temporarily for the relief of pain. Large repeated doses of opium or morphine are now condemned by almost all authorities.

The American Orthopædic Association.—The eleventh annual meeting will be held in Washington, on May 4th, 5th, and 6th, under the presidency of Dr. Samuel Ketch, of New York. Besides the president's address, the programme includes the following papers: Erasion of the Knee Joint, with Conservation of the Epiphyseal Cartilage, by Dr. Harry M. Sherman, of San Francisco; The Treatment of Deformities of the Knee resulting from Tumor Albus, with Special Reference to the Cases in which the Patella has become Adherent, by Dr. Joel E. Goldthwait, of Boston; Straight *versus* Flexed Knee with Rigidity, by Dr. H. Augustus Wilson, of Philadelphia; The Justification of Resection in the Early Stages of Knee-joint Disease, by Dr. L. A. Weigel, of Rochester; The Operative Treatment of Lumbar (Pott's) Abscess, by Dr. J. K. Young, of Philadelphia; Operative Procedures in Orthopædic Surgery, with an Analysis of Operations, by Dr. V. P. Gibney, of New York; Non-tuberculous Inflammation of the Spine, by Dr. T. Halsted Myers, of New York; A Report on Cases of Traumatic Spondylitis, by Dr. A. J. Gillette, of St. Paul; Contraction of the Front of the Shoulder, and its Influence on Curvatures of the Spine, by Dr. E. H. Bradford, of Boston; The Modern School Desk as a Factor in the Production of Lateral Curvature of the Spine, by Dr. L. S. McCurdy, of Pittsburgh; The Treatment of Torticollis, by Dr. E. G. Brackett, of Boston; The Place of Traction in the Treatment of Clubfoot, by Dr. N. M. Shaffer, of New York; An Improvement in the Clubfoot Shoe, A Study in Human Gait, and A Deformity of the Foot in Greek, Roman, and Modern Art, by Dr. E. H. Bradford, of Boston; Some Effects upon the Leg of Pronation of the Foot, by Dr. John Dane, of Boston; The Anatomy of a Severe Case of Equino-varus in the Adult, by Dr. John Ridlon, of Chicago; Tenotomy in Spastic Paraplegia, by Dr. F. S. Coolidge, of Chicago; The Direct Transplanting or Grafting of Muscles in the Treatment of Paralytic Deformities, by Dr. Joel E. Goldthwait; A Case of Multiple Deformities, the Result of Traumatic Anterior Poliomyelitis, and A Case of Asymmetrical Development, by Dr. A. R. Shands, of Washington; The Results in Fourteen Operations for Congenital Dislocation of the Hip, as shown by the X Ray, by Dr. A. M. Phelps, of New York; Report of Three Operations done for Congenital Dislocation of the Hip Joint, by Dr. W. R. Townsend and Dr. Reynolds, of New York; General Laxity of the Ligaments with Congenital Hip Luxation, by Dr. Henry Ling Taylor, of New York; A Case of Double Congenital Dislocation of the Knees, by Dr. James Kerr, of Washington; Congenital Deficiencies of the Bones, by De Forest Willard, of Philadelphia; Congenital Elevation of One Scapula—Two Cases, by Dr. R. W. Lovett, of Boston; Congenital Absence of the Radius, by Dr. Henry Ling Taylor; Congenital Dislocation of the Shoulder Joint, by Dr. Charles L. Scudder, of Boston; The Prognosis of Hip Disease under Efficient Treatment, by Dr. Leroy W. Hubbard, of New York; The Significance of Abscesses in Hip Disease, by Dr. R. W. Lovett; Excision of the Hip, by Dr. W. R. Townsend and Dr. Reynolds; Gluteal Bursitis, by Dr. E. G. Brackett; A Further Study of the Mechanical Treatment of Ununited Fracture of the Neck of the Femur, by Dr. N. M. Shaffer; Further Observations on Bending of the Neck of the Femur—Coxa Vara—with Particular Reference to its Diagnosis and Treatment and Further Observations on Fracture of the Neck of the Femur in Childhood, with Reference to its Differentiation from other Injury or Disease, and to its Treatment, by Dr. Royal Whitman, of New York; Coxa Vara as a Manifestation of Late Rickets—with a Report of a Case, by Dr. R. H. Sayre, of New York; The Influence of Diphtheria on Tuberculosis of the Bones and Joints, by Dr. John Ridlon; The Question of Climate as an Adjunct in the Treatment of Tuberculous Joint and Spinal Disease, by Dr. Samuel Ketch, of New York; Heredity in Deformity, by Dr. L. A. Weigel; Unpromising Cases, by Dr. C. C. Foster, of Cambridge; Fractures of the Elbow Joint in Childhood Treated by Acute Flexion of the Forearm, by Dr. Charles L. Scudder; Gunshot Injuries of the Tarsus, by Dr. J. D. Griffiths, of Kansas City; and An Englishman's Views of Orthopædic Surgery as Practised in America, by Mr. Noble Smith, F. R. C. S., of London.

Aseptic Traumatic Fever.—Under this title, in the *Presse médicale* for March 27th, M. Pillon gives a description of the different forms of this affection and of the clinical, ætiological, and pathogenic classifications, with the results of his experiments and clinical observations, which he sums up as follows: 1. The existence of aseptic traumatic fever can not be doubted; it occurs even more frequently than has been supposed up to the present time. 2. In animals, as in man, contusions of the first degree may give rise to elevations in temperature which are more often very slight and of short duration; the hyperthermia does not exceed a few tenths of a degree during the twenty-four hours. 3. In man contusions of the second degree are more frequently followed by hyperthermia than those of the first degree, and this hyperthermia may increase as much as 1.4° or even 1.9° F., and it may last from twelve to fifteen days; it may also be completely absent. 4. Contusion of the third degree followed by partial sphacelus frequently produces a marked hyperthermia, about 1.4° F. This is due especially to the production of the sphacelus, and it persists, in fact, until the formation of the groove of separation between the living and the dead tissues. At this time vascular obliteration hinders the absorption of the pyretogenic substances elaborated by the gangrenous anatomical elements, and the temperature tends to become normal. When the eschar falls, the hyperthermia disappears completely. 5. Fractures are very often followed by a hyperthermia, and it is higher after fractures by contusion than after fractures by indirect violence, which is evidently connected with contusion of the bones and of the soft parts; articular fractures, whether they are caused by indirect or by direct violence, invariably give rise to a great elevation of temperature. The maximum temperature is reached more frequently on the evening of the second or of the third day. This hyperthermia is of a variable duration; it depends frequently, but not always, on the amount of the bloody effusion; the degree of attrition of the tissues also has a great influence. 6. Closed wounds may also give rise to febrile alterations. Open surgical wounds frequently cause a rise in temperature; it is the same also in lesions due to distention, such as sprains, dislocations, muscular ruptures, etc. 7. Aseptic fever frequently follows traumatisms which involve the synovial membranes. Hæmatarthrosis is ordinarily accompanied by an elevation of temperature of from 1.4° to 2.8° F., and sometimes even more than 3.3°. It is the same in acute and aseptic traumatic hydrarthrosis. 8. In regard to the pleura, according to Tuffier, clinical observations of traumatic hæmothorax prove that aseptic fever may accompany the production of intrapleural bloody effusions. 9. Traumatic lesions of organs, such as the kidneys, may also give rise to aseptic fever, according to Tuffier. 10. Aseptic fever following mechanical lesions of the nervous centres has been demonstrated by a large number of clinical and experimental facts, according to Guyon. 11. The diagnosis of aseptic traumatic fever is based on the following: *a.* An exact knowledge of the cause, the mode of action, and the seat of the injury, etc.; it must be noted, however, that a direct connection between the degree of the hyperthermia and the extent of the local lesions does not always exist. *b.* The study of the temperature. *c.* The absence of general symptoms. *d.* The asepsis shown by the bacteriological examination of the liquids discharged in the traumatic region and of the blood of the general circulation. *e.* The absence of all intercurrent or previous affections. *f.* The observation of local symptoms. The surgeon should bear in mind the influence of menstruation and constipation in post-operatory fevers, and not confound aseptic traumatic fever with hysterical fever and the fever in chlorosis and in cancer. 12. The pathogenic theories of aseptic traumatic fever are as follows: *a.* The fever of attenuated septicæmia; *b,* epitraumatic fever; *c,* the local physiological reaction; *d,* reflex fever; *e,* the absorption of pyretogenic substances. Of these five theories, the last two only are to be considered. The theory of reflex fever, sustained by M. Terrier and M. Bouilly, certainly contains some truth. The recent experiments of M. Ansonneau have shown that in aseptic fever a part of the elevation of temperature is due to the sensitive nervous element. The theory of absorption of thermogenic substances contained in the tissues altered by traumatism, or secreted abnormally by the anatomical elements, the nutrition of which is modified by the shock of the injury or by gangrene, remains.

The conclusions are as follows: 1. Aseptic traumatic fever is due to absorption of pyretogenic substances proceeding from traumatic effusion, from necrobiosis of the cells mechanically injured, from the products elaborated by the anatomical elements the vitality of which is affected, and from products secreted by the migratory white globules. 2. A part of the elevation of temperature is due to the sensitive nervous element. 3. Not only has a knowledge of aseptic traumatic fever a great theoretical importance, but the surgeon should always endeavor to make a diagnosis. In this way unnecessary apprehension will be avoided and ill-timed intervention prevented.

The American Gynæcological Society.—The twenty-second annual meeting will be held in Washington, on May 4th, 5th, and 6th, under the presidency of Dr. James R. Chadwick, of Boston. Besides the president's address, the following titles are included in the programme: An address of welcome, by Dr. A. F. A. King, of Washington; Multiple Myomata in the Abdominal Cavity, by Dr. Bache Emmet, of New York; The Treatment of Uterine Myomata and Diseases of the Uterine Annexa *per Vaginam,* by Dr. William H. Wathen, of Louisville; The History and Present Status of Hysterectomy for Fibroid Tumors of the Uterus, by Dr. Charles P. Noble, of Philadelphia; Secondary Operations, by Dr. H. J. Garrigues, of New York; Suggestions concerning Ventral Hernia resulting from Abdominal Section, and its Treatment, by Dr. Andrew F. Currier, of New York; The Benefits derived from the Introduction of Modern Surgical Methods in Obstetrics, by Dr. Egbert H. Grandin, of New York; Primary Tuberculosis of the Breast complicating Pregnancy, by Dr. Edward P. Davis, of Philadelphia; Perityphlitis and Appendicitis in their Relations to Obstetrics and Gynæcology, by Dr. Paul F. Mundé, of New York; The Treatment of Syphilitic Women in Pregnancy and Parturition, by Dr. Robert A. Murray, of New York; Some Pathognomonic Physical Signs of Chronic Gonorrhœal Infection in Women, and their Value in the Diagnosis of Pelvic Disease, by Dr. A. Palmer Dudley, of New York; Sociological Aspects of Gonorrhœa, by Dr. E. W. Cushing, of Boston; When to Amputate in Preference to the Usual Operation for Lacerations of the Cervix Uteri, by Dr. Thomas Addis Emmet, of New York; The Result of Two Hundred Operations for the Cure of Retrodisplacements of the Uterus, by Dr. A. Lapthorn Smith, of Montreal; Excessive Mobility of the Uterus, by Dr. George M. Edebohls, of New York; Intra-abdominal Shortening of the Round Ligaments for Posterior Displacements of the Uterus, by Dr. M. D. Mann, of Buffalo; A Preliminary Report on a New Method of Vaginal Fixation, by Dr. Edward Reynolds, of Boston; Shortening the Round Ligaments through the Anterior Vaginal Fornix for Posterior Displacements of the Uterus, by Dr. J. Riddle Goffe, of New York; and Pelvic Blood Collections, and their Treatment by Vaginal Incision, by Dr. E. E. Montgomery, of Philadelphia.

Memorials will be read as follows: Sir T. Spencer Wells, Bart., by Dr. J. Braxton Hicks, of London; and Horatio R. Holmes, M. D., by Dr. Howard A. Kelly, of Baltimore.

The American Laryngological Association.—The nineteenth annual congress will be held in Washington, on May 4th, 5th, and 6th, under the presidency of Dr. Charles H. Knight, of New York. Besides the president's address, the programme includes the following papers: Guaiacol as a Local Anæsthetic in Operations on the Upper Air-passages, by Dr. J. E. Newcomb, of New York; The General Health and the Upper Respiratory Organs, by Dr. J. C. Mulhall, of St. Louis; Submucous Hæmorrhage of the Vocal Cords, by Dr. Samuel W. Langmaid, of Boston; Hysterical Dysphagia, by Dr. A. Coolidge, Jr., of Boston; The Bacteria of the Normal Nose and the Bactericidal Properties of Nasal Mucus, by Dr. W. H. Park, of New York, and Dr. Jonathan Wright, of Brooklyn; Remarks on the Treatment of Chronic Affections of the Faucial Tonsils, by Dr. J. W. Gleitsmann, of New York; The Nature and Symptoms of Atrophic Rhinitis, by Dr. William E. Casselberry, of Chicago; The Pathology of Atrophic Rhinitis, by Dr. J. Nolan Mackenzie, of Baltimore; The Treatment of Atrophic Rhinitis, by Dr. Clarence C. Rice, of New York, and Dr. J. C. Mulhall; Simulated Sarcoma of the Tonsil, by Dr. D. Bryson Delavan, of New York; A Case of Angeioma of the Tonsil, with Recurrence of the Same Three Years after Removal, by Dr. J. H. Hartman, of Chicago; A Report of a Case of Suppurative Inflammation of the Frontal, Ethmoidal, and Maxillary Sinuses, by Dr. J. H. Bryan, of Washington; A Case of Subglottic Tumor causing Great Dyspnœa—Removal by Tracheotomy and Curetting, by Dr. J. W. Farlow, of Boston; Papillary Œdematous Nasal Polypi and their Relation to Adenomata, by Dr. Jonathan Wright; A Contribution to the Study of Laryngeal Phthisis, by Dr. T. Morris Murray, of Washington; Primary Lupus of the Larynx, by Dr. Emil Mayer, of New York; Four Cases of Osteoma of the Nasal Cavities, by Dr. J. E. H. Nichols, of New York; and The Advantage of Bromide of Ethyl in Adenoid Operations, by Dr. T. M. Hardie, of Chicago.

The Indiana State Medical Society will hold its forty-eighth annual meeting in Terre Haute, on Thursday and Friday, May 20th and 21st, under the presidency of Dr. J. H. Ford, of Wabash.

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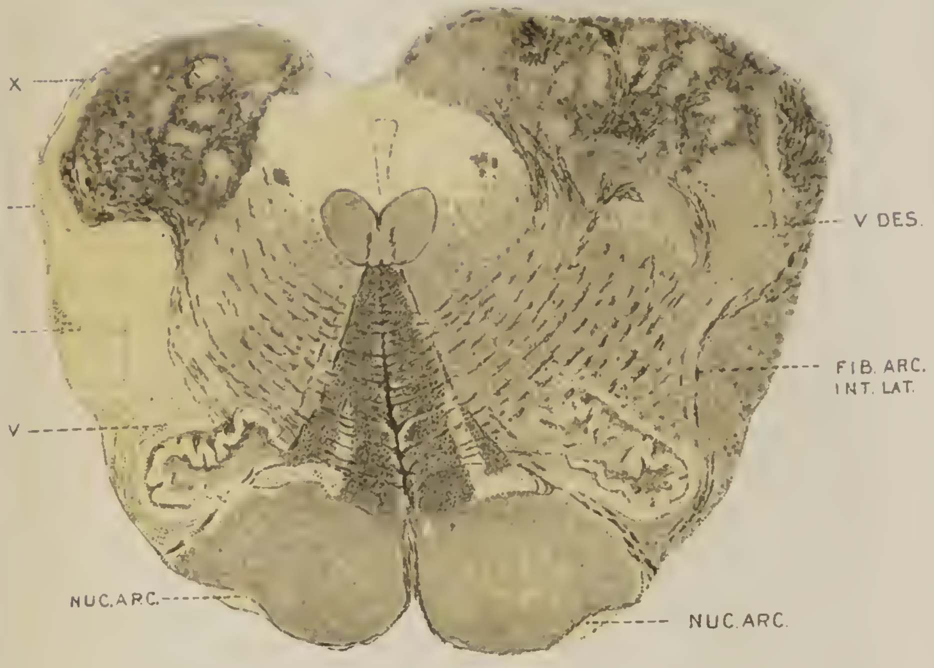

Figure 1 represents a section through the medulla oblongata at a level near the caudal end of the fourth ventricle, showing the undegenerated tracts of Flechsig and Gowers, and degenerations in the lateral portion of the formatio reticularis on the left side, in the descending root of the left fifth nerve, surrounding both olives, and to a less degree in the right anterior pyramid.

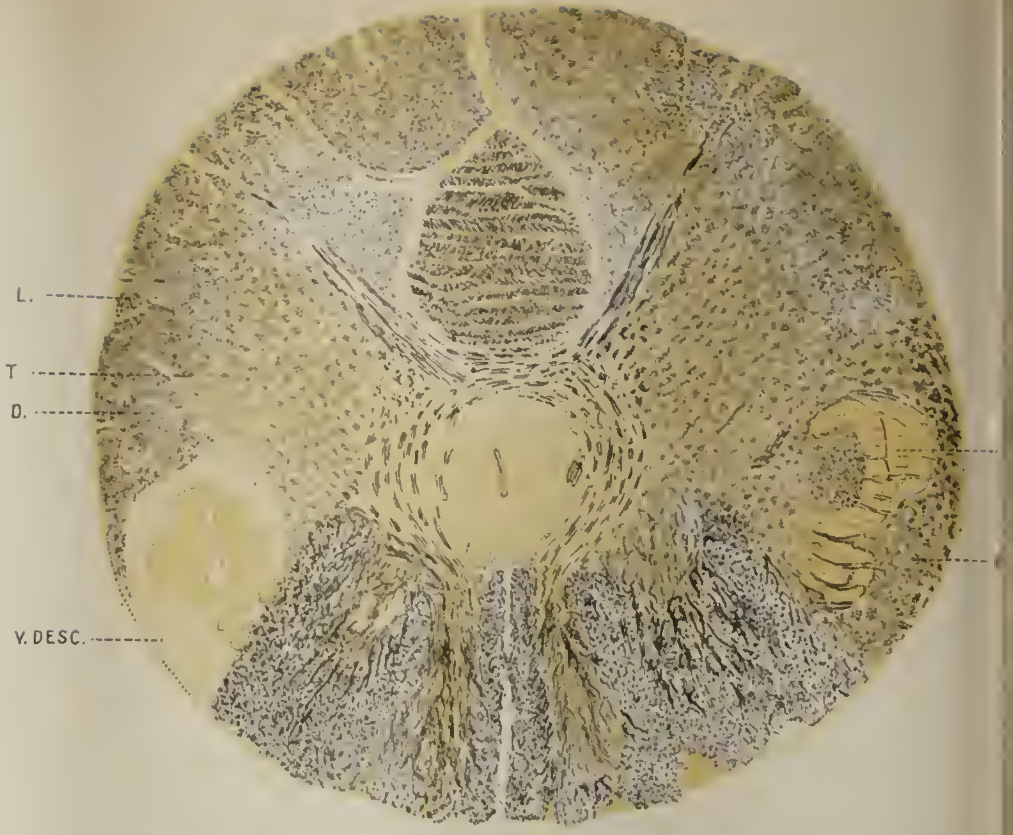

Figure 2 represents a section through the medulla oblongata at the level of the beginning of the sensory decussation, showing degeneration of the fibres of the left descending root of the fifth nerve, V, while on the right side these fibres are healthy, G. The substantia gelatinosa on the left side is not greatly degenerated. There is degeneration of the descending cerebellar tract of Marchi, L, T, and D, and of the right anterior pyramid.

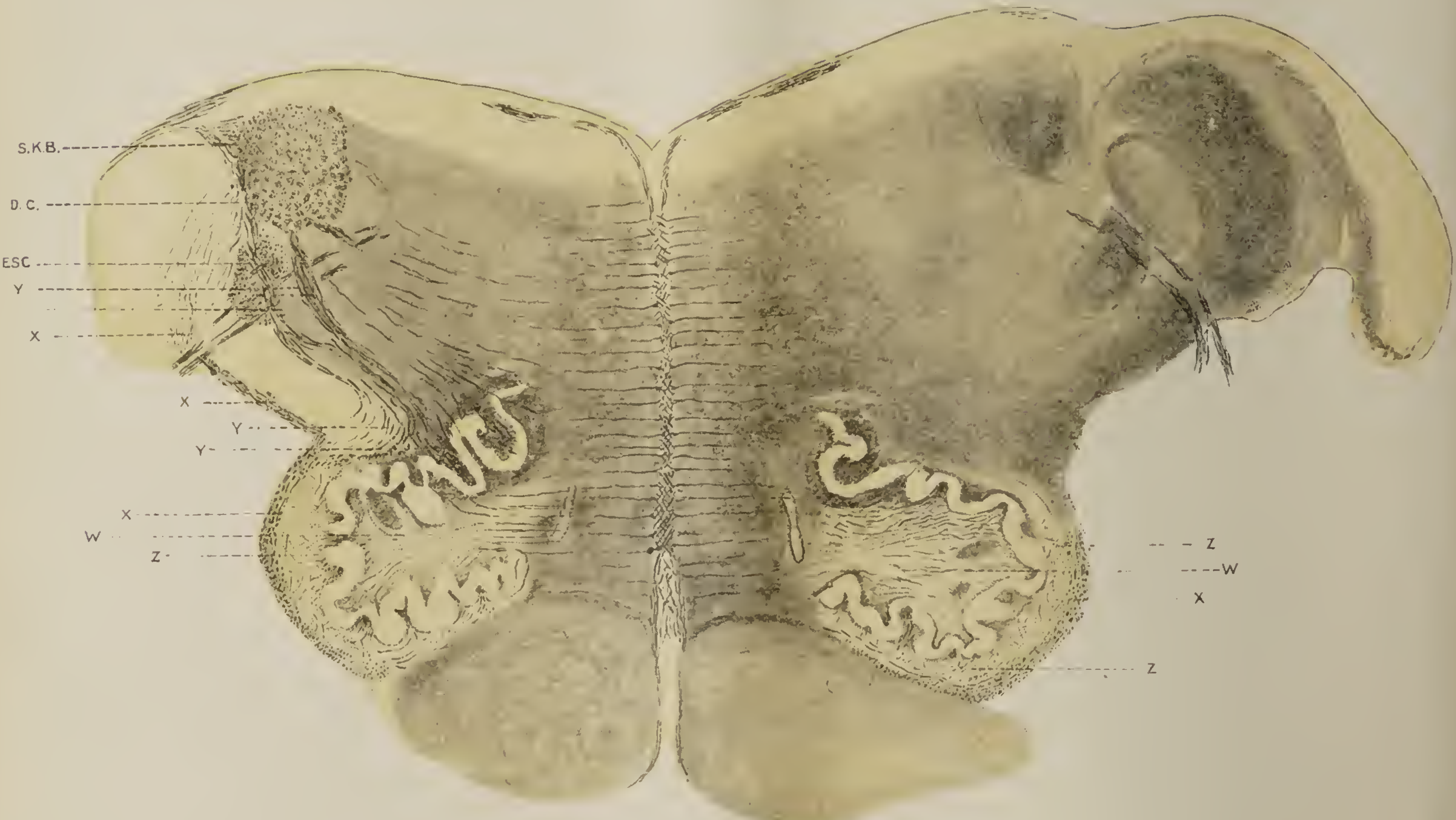

Figure 3 represents a section through the medulla oblongata at the level of the cochlear nerves, showing degeneration of both anterior pyramids, especially of the right, and of the stratum zonale and hilum of each olive W and Z, also of the lateral portion of the left formatio reticularis and of the left corpus restiforme. The direct sensory cerebellar tract is represented by S, K, B; Deiters's nucleus by D, C; the descending vestibular olivary tract by y y; the descending vestibular spinal tract by x x; and the descending root of the fifth nerve by V Desc.

DR. HUN'S ARTICLE ON ANALGESIA, THERMIC ANÆSTHESIA, AND ATAXIA.

Original Communications.

ANALGESIA, THERMIC ANÆSTHESIA, AND ATAXIA,

RESULTING FROM FOCI OF SOFTENING IN THE MEDULLA OBLONGATA AND CEREBELLUM DUE TO OCCLUSION OF THE LEFT INFERIOR POSTERIOR CEREBELLAR ARTERY. A STUDY OF THE COURSE OF THE SENSORY AND CO-ORDINATING TRACTS IN THE MEDULLA OBLONGATA.

By HENRY HUN, M. D.,
PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM
IN THE ALBANY MEDICAL COLLEGE.

(*Continued from page 519.*)

The Ascending and Descending Degenerations.—We may now study the degenerations resulting from these three foci of softening. At a level (Plate I, Fig. 1) below the medulla lesion which corresponds to the caudal end of the fourth ventricle the degenerations are descending. It is understood, of course, that the light zone in the left lateral portion of the section at this level, which is bereft of fibres, is the result of secondary degeneration and does not indicate softening, for the latter ceases above this level. The descending root of the fifth nerve is completely degenerated, and there is also descending degeneration of the corpus restiforme, the fibres of which have been interrupted at a higher level. There is also descending degeneration of the most lateral of the internal arcuate fibres, which, as is shown in Plate I, Fig. 1, are entirely absent on the left side. Inasmuch as these fibres pass between the corpus restiforme and the stratum zonale of the greater olivary bodies of both sides, which stratum zonale is also degenerated, there must be a *descending* degeneration which passes down the corpus restiforme to the stratum zonale of both olives by way of some of the internal and external arcuate fibres. This very important descending tract was discovered long ago by Marchi,* but has found remarkably belated expression in most of the text-books, which still continue to picture and describe fibres from the olives to the cerebellum. This is wrong; the fibres pass the other way, in a descending direction, and this case shows this most plainly; for if the olives sent fibres to ascend to the cerebellum through the corpus restiforme, such fibres should cross the lateral degenerated crescent in the lateral portion of the medulla (Plate I, Fig. 1) and pass up through the corpus restiforme. There is no destructive lesion at this level (the patch of softening in the medulla being higher up, and not shown on this figure), and nothing would interrupt such fibres in their supposed and erroneous course from the olives to the cerebellum. Among the text-books Kölliker supports the view of the descending character of the cerebello-olivary fibres, but, with all deference to this authority, I find the course of reasoning from purely histological grounds, whereby he arrives at this conclusion,† rather involved, and I think that the present case demonstrates, by pathological methods, most clearly the true path of the fibres in question. Besides sending fibres to the lower olivary bodies, this descending cerebellar tract (of Marchi) continues downward, scattered through the anterior and lateral columns of the spinal cord, and probably ultimately terminates about the anterior horn cells.

The light color of the anterior pyramids, especially of the right pyramid, which, in Plate I, Fig. 1, is in marked contrast to the dark interolivary region, shows that the pyramids contain many degenerated fibres which were destroyed by the focus of softening in the pons.

Finally, there are also degenerations of the ventral portion of the rhaphe, the nucleus arciformis, and the external arcuate fibres, which pass from the cerebellum through the corpus restiforme to this nucleus. A consideration of the relation of these parts would lead to a review of Mingazzini's papers on this territory, together with Kölliker's observations on Mingazzini's work, which are exceedingly complicated and still somewhat hypothetical. The degeneration of this particular territory is without any definite bearing on the main symptoms, and thus their study does not come within the scope of the present report, but will be considered in a future observation on the case, along with several other complicated and hypothetical points in the anatomy of the isthmus and cerebellum. Incidentally (Plate I, Fig. 1) this case seems to corroborate the presence of the fibræ arcuatæ peripyramidales e nucleo-laterali, which is Mingazzini's plan of these fibres in connection with the nuclei arciformes.

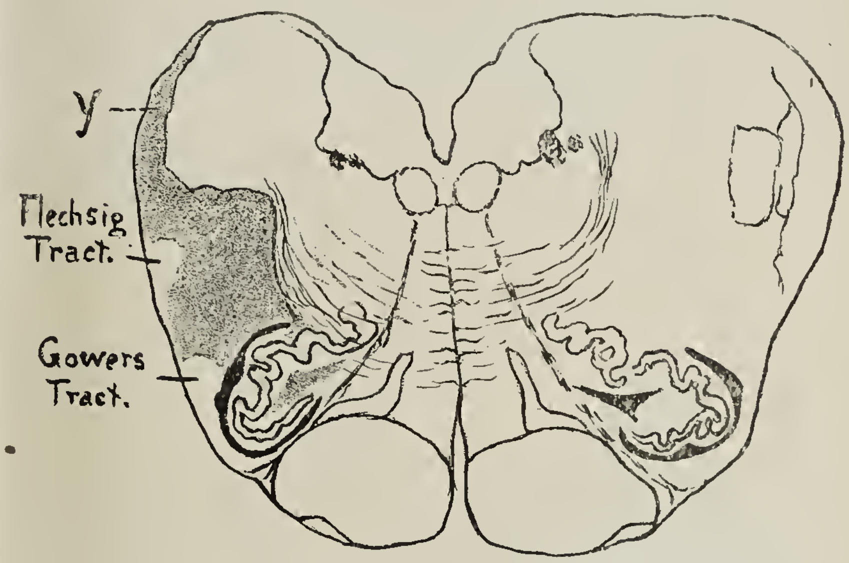

FIG. 8.—Diagram of the medulla at a level near the caudal end of the fourth ventricle. The shading represents the degenerated areas.

Having seen the fibres which are blotted out of the medulla at the level represented by Plate I, Fig. 1, by reason of secondary descending degenerations from the softenings in the medulla, the corpus dentatum, and the pons, let us consider the fibres which are left undamaged at this level. These undamaged fibres must consist of ascending tracts from lower levels of the medulla or from the spinal cord. Two of these undamaged tracts (Figs. 3 and 8, Plate I, and Fig. 1), one just dorsal and lateral of the olive, and the second in the middle of the lateral border of the medulla (Fig. 8), are well known and we can recognize the former as Gowers's tract and the latter as Flechsig's column. Flechsig's column at this level begins to pass into the corpus restiforme, and the course of its fibres, partly by the fibræ arcuatæ externes dorsales (Plate I, Fig. 1, Y, and Fig. 8, Y), partly by their approach to the lower border of the restiform body and direct fusion with it, can be beautifully demonstrated in the sections corresponding to Fig. 8 and Plate I, Fig. 1; for all the other restiform fibres are completely blotted out by the descending degeneration from the lesion above. Thus in Plate I, Fig. 1, V shows the position of Gowers's tract in its entirety, and Z and Y show the same of Flechsig's column. It is also to be noted that Gowers's bundle merges in with the lateral field of the formatio reticularis, which is quite homologous with the position of both in the spinal cord.

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* Des dégénérations consécutives à l'extirpation partielle et totale du cervelet. *Archives italiennes de biologie*, 1886.

† Kölliker. *Handbuch der Gewebelehre*, Bd. ii, p. 317, lower paragraph.

Finally, another group of fibres passes into the dorsal border of the restiform body, which is shown at X in Plate I, Fig. 1. This must also be an ascending tract, and it passes from the posterior columns, or their nuclei, into the restiform body (probably as with the direct cerebellar tract to the nuclei fastigii and vermis). The fibres, which are universally pictured and recorded as passing from the opposite posterior columns, or their nuclei, to the corpus restiforme, *via* internal arcuate fibres, rhaphe, and superficial arcuate fibres, have not been considered here, for I do not believe that such fibres exist at all, as will be demonstrated later on.

Let us now follow the degenerations at a still lower level, for instance, at the beginning of the sensory decussation (Fig. 9 and Plate I, Fig. 2). These degenerations are still of the descending character, and the most striking field of degeneration is that of the descending trigeminus root, and shows how incorrect its former name, "ascending root," was. This trigeminus root is absolutely blotted out, as it was in Fig. 8 and in Plate 1, Fig. 1, and there is not a vestige of the collaterals by which it terminates in the substantia gelatinosa of the posterior horns, which can be seen on the opposite side (Plate I, Fig. 2, V.) (In Fig. 9 the degenerated fibres are represented by black dots, while in Plate I, Fig. 2, they are represented in the natural colors of the section.)

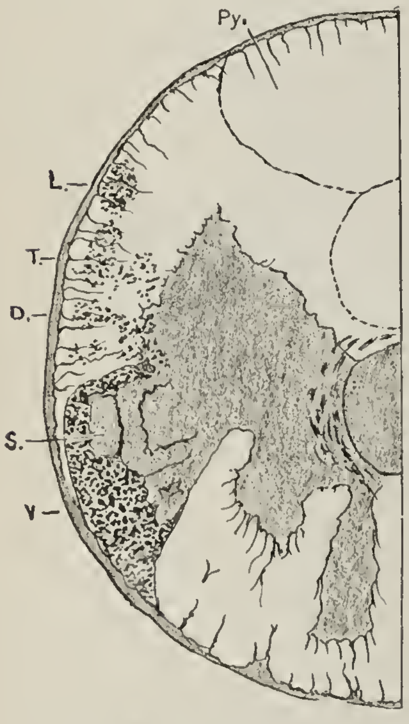

Fig. 9.—Diagram of a section of the medulla at the beginning of the sensory decussation. L T D, degenerated fibres of the descending cerebellar tract of Marchi; V, degenerated fibres of the descending root of the fifth nerve; S, substantia gelatinosa.

In the lateral white column there are also scattered fine bundles of degenerated fibres, which it is very difficult to trace with Weigert's stain, and which require Marchi's stain for any accurate study of them; so that there are very certainly a great many more scattered degenerated fibres than are represented in these figures, which it is impossible to recognize in these sections stained by Weigert's method. These larger and smaller bundles and isolated fibres in the lateral white column, degenerated in a descending direction, must be the continuation of the descending cerebellar fibres to the cord, or Marchi's tract. The fibres of Marchi's tract (Plate I, Fig. 2, L. T. D.), then, in this level, are scattered about and intermingled with Gowers's tract and in the antero-lateral column, possibly also with the fibres of the anterior column, and perhaps also to a less extent in the direct cerebellar tract.

Finally, on the lateral border of the left anterior horn (Fig. 9 and Plate I, Fig. 2) there are also small scattered bundles of degenerated fibres, not very distinct as individual degenerated bundles by Weigert's stain, but in the aggregate these degenerated bundles give to the whole middle segment of the lateral border of the left anterior horn a paler color than the corresponding portion of the opposite side shows. These bundles seem to be fibres from the damaged portion of the lateral field of the formatio reticularis degenerating downward, possibly including some fibres of Marchi's descending cerebellar tract; but it is difficult to say with any certainty what these fibres are or where they come from.

At the level of the first cervical segment of the spinal cord the left pyramidal tract is degenerated from the right-sided pons lesion, which degeneration may be seen in the anterior pyramids at higher levels (Plate I, Fig. 1), and is indicated by the lighter tint of the pyramids, especially on the right side; but this degeneration of the left crossed pyramidal fibres in the cord apparently extends much beyond its usual boundaries. The degenerated pyramidal field extends too far ventrally and encroaches upon the antero-lateral fundamental column, Gowers's column, and somewhat on the antero-lateral margin of the cord. There must therefore be other descending degenerated fibres associated with and lying in front of the crossed pyramidal tract, and these fibres are again the descending cerebellar tract fibres of Marchi, which in this case are scattered about in front of the crossed pyramidal tract and occupy the columns just mentioned. These descending cerebellar fibres must pass down to the lower levels of the cord, but as they are not definitely grouped together and lie interpolated among normal fibres they can not be recognized nor traced by Weigert's stain.

The degeneration of the descending root of the trigeminus can not be followed beyond its now definitely established lower limit, namely, the upper level of the first cervical segment, where the caput cornu posterioris begins to assume a diminishing degree of development.

Besides the descending degenerated fibres already mentioned there are still others of more or less hypothetical existence, which must be left for a future paper on the case.

Having considered the descending degenerations present in this case, it is now in order to study the ascending degenerations above the foci of softening.

At a level corresponding to the entrance of the cochlear nerve and uppermost filaments of the glossopharyngeal, or entrance roots of Wrisberg's nerves, the columns of Gowers and of Flechsig are completely blotted out (Plate I, Fig. 3), for the nerve fibres of these columns have been destroyed in passing through the softened region. Sections at this level also show that if fibres pass from the olivary bodies to the corpus restiforme they must be very few in number, for no such fibres can be seen passing across the degenerated lateral segment of the medulla at this level.

Furthermore, fibres which pass from the posterior columns or their nuclei into the corpus restiforme (Fig. 2 and Plate I, Fig. 1) are wiped out of existence at this level, for the whole corpus restiforme has been destroyed at a lower level.

Fibres from the nucleus lateralis to the corpus restiforme are also described by Bechterew, but although these fibres as well as his central "*Haubenbahn*" from the olives to the cortex of the globus pallidus (Flechsig) must be more or less damaged by this lesion, they will not be considered in this paper, for the existence of both of these systems is not definitely established, or at any rate corroborated, by other methods of investigations than the embryological or method of Flechsig. I can find no traces of upward degeneration of the central "*Haubenbahn*" of Bechterew by Weigert's method, notwithstanding its more or less complete destruction by the softening. The case would therefore seem to indicate that the *Centralhaubenbahn* carries impulses in a descending rather than in an ascending direction.

The ventral and lateral fibres of the formatio reticularis which were destroyed in the softened area do not show any upward degeneration at this level, from which fact it is to be concluded that these fibres are short tracts connecting adjacent levels of the medulla.

There is still quite a considerable mass of degenerated fibres at this level unaccounted for. The corpus restiforme is almost completely destitute of fibres, and there is a strip of degeneration just inside of the middle of the lateral boundary line of the medulla, also a degeneration of the stratum zonale and hilus of both olives (Plate I, Fig. 3). After subtracting the fibres degenerating upward from the medulla softening at the lower level, there is still a considerable space left in the degenerated fields in Plate I, Fig. 3, which must contain fibres degenerating downward from another source of destruction than the medulla softening. This lesion is the softening of the corpus dentatum and nucleus emboliformis of the left side of the cerebellum. Fibres from the cerebellum have been destroyed by this lesion of the dentate nucleus, and they must degenerate downward in the corpus restiforme in the lateral middle border zone of the medulla to the stratum zonale and hilus of both olives, and then on to the spinal cord; for we have subtracted all the ascending degenerations from the medulla softening immediately beneath this level and yet find the fibres of the above-mentioned territories degenerated. So this case furnishes additional evidence of the definite existence and course (so far as its connection with the olivary bodies and spinal cord are concerned) of the descending cerebellar tract of Marchi in the human nervous system.

A very interesting point in the anatomy of the medulla, which this case throws light upon, is the distribution of the descending roots of the vestibular nerve to the greater olivary bodies and spinal cord. This descending vestibular olivary tract and descending vestibular spinal tract, as I would term this tract from its definite and elegant exposition in Plate I, Fig. 3, "YY," "XX," is divisible into two sets of descending fibres, XX, which seem to pass directly to the spinal cord, and an internal group, YY, which pass to the olivary bodies (of both sides). I venture to suggest from the remarkably favorable opportunity of studying this tract in Dr. Hun's case that fibres do not pass from the olive to Deiters's bundle (Bruce), but in the opposite direction, which would be much more in accordance with the functional requirements of this nerve-fibre pathway. I had supposed that this observation in regard to the vestibular nerve was hitherto unrecorded. I find, however, that Bechterew * describes fibres which pass from Deiters's nucleus through the lateral field of the formatio reticularis to the fundamental bundle of the lateral column of the spinal cord, and quotes Bruce,* who describes fibres passing from the lower olive to Deiters's nucleus. Bechterew is convinced that the fibres described by Bruce are identical with his own. Kölliker also discusses this fibre system in conjunction with Bruce's and Held's observations. This case, however, gives a very clear demonstration of the course of the descending vestibular fibres, and presents a fortunate opportunity of describing the tract quite independent of the conflicting views held by these writers.

The nucleus ambiguus is probably undamaged at this level, and the descending root of the fifth nerve is normal, which is what we should expect, for the fibres of this descending root have their origin in the cells of Gasser's ganglion and pass downward in the medulla. Now, in regard to both of these structures, it should be observed that while they are intact at this level, this represents only a small portion of their extent. It is only the small portion of the nucleus ambiguus which sends forth the very uppermost glosso-pharyngeal fibres that is undamaged, and as for the descending trigeminus root, this upper intact portion represents not more than one tenth or one eighth of its extent. Thus, both of these structures are practically destroyed. The cochlear nerve on the left side unfortunately could not be studied, for the planes of section of the isthmus in the fresh condition were so faulty and the surface of the hardened segments so indented and warped that the series of sections becomes interrupted just at the entrance of the left cochlear nerve root.

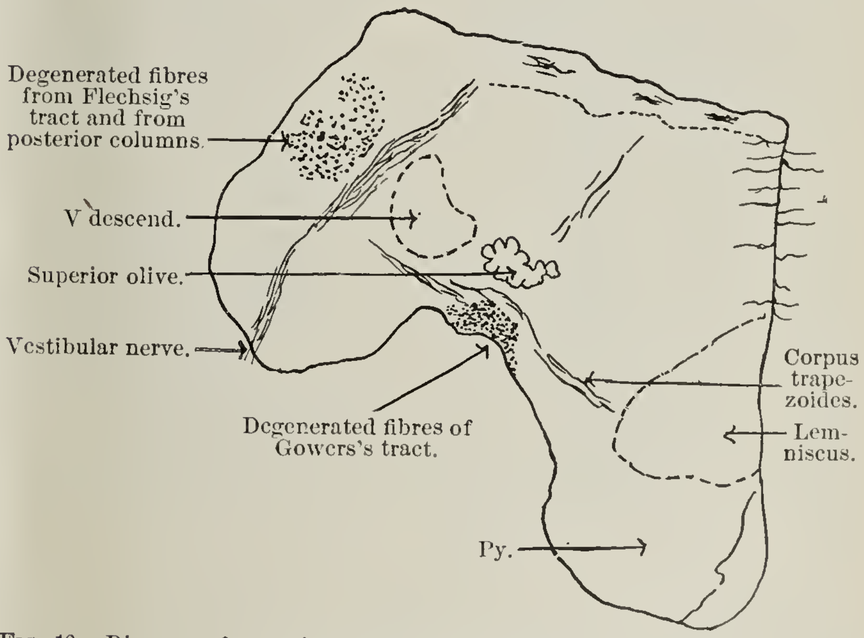
Degenerated fibres from Flechsig's tract and from posterior columns.
V descend.
Superior olive.
Vestibular nerve.
Degenerated fibres of Gowers's tract.
Corpus trapezoides.
Lemniscus.
Py.

Fig. 10.—Diagram of a section through the isthmus just above the junction of the medulla and pons.

The degenerations at a still higher level in the isthmus are now to be considered. At a level corresponding to Fig. 10, just above the junction of the medulla and pons, the degenerated areas may be very easily identified. The degenerated fibres in the corpus restiforme, both ascending and descending, the former including Flechsig's column and some fibres from the posterior columns and their nuclei of the same side, and the latter being the descending cerebellar tract of Marchi, lie in the lateral border of this level where the fibres of the corpus restiforme, surrounded by the middle crus cerebelli, pass to the cerebellum. A second group of degenerated fibres lies in the deeply indented angle of the pons, just ventral to the superior olive (Fig. 10). This group of fibres is the continuation of the ascending degenerated fibres of Gowers's tract; for we have accounted for, traced, and disposed of the other degenerated systems.

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* *Die Leitungsbahnen im Gehirn und Rückenmark*, 1894, p. 96.

* *Proceedings of the Royal Society of Edinburgh*, 1891.

Thus have been described the masses of gray matter and the fibre systems destroyed by the three foci of softening and the ascending and descending degenerations resulting from them.

(To be concluded.)

DOUBLE INTESTINAL ANASTOMOSIS WITH MURPHY BUTTONS,

*WITH REPORT OF A SUCCESSFUL CASE.**

By JAMES H. GLASS, M. D.,
SURGEON IN CHARGE, FAXTON HOSPITAL, UTICA, N. Y.

To the successful cases of double intestinal anastomosis with the Murphy button reported respectively by Williams, of Iowa, Carpenter, of New York, and Schede, of Hamburg, I am privileged to add the following, operated at Faxton Hospital, Utica, N. Y., April 21, 1896:

Mrs. M., married, aged forty-two years, had borne four children, was seen, with her physician, April 20th. Family history good, with no evidence of prior abdominal or pelvic trouble, excepting an attack of typhoid fever twelve years ago. Since the fall of 1895 patient had some abdominal pain of a colicky nature, accompanied by constipation. In the following March, having had an injury to the left groin, the pain became more constant and severe; the constipation alternated with diarrhœa; she had nausea and vomiting with rise of temperature, emaciation, and marked enfeeblement; soon there appeared a sensitive mass in the left inguinal region, of about the size of one's fist, which seemed to be fixed. Believing an exploratory operation indicated, the patient was transferred to the hospital and prepared for operation April 21st, when she had a temperature of 103°, with a rapid, failing heart. The median incision was made, disclosing an adherent mass, involving the ileum, descending colon, and the left uterine ligament, tube, and ovary, having the macroscopical appearance of a sarcoma. The whole mass, including seven inches and a half of colon with four inches and a half of ileum, was removed, care being taken to avoid the parallel artery, molestation of which has been experimentally shown to be so productive of intestinal paralysis and necrosis.

The anastomosis in each instance was made with the largest size button for the colon, the next larger size being used for the small intestine. The raw surface of the ligament was covered with peritonæum, the abdominal wall being closed with catgut for the peritonæum and fascia and a buried silkworm-gut suture for the skin, the intestinal sutures being placed before the section of the gut was done.

The microscopical report of Dr. J. N. Teeter, of the State Hospital at Utica, who kindly made the examination for me, is appended for the purpose of showing the benign character of all but that portion of the mass involving the large intestine.

"The specimens received from Dr. Glass were from the small and large intestine, with uterine ligament, tube, and ovary, the whole amount of gut being four inches and a half and seven inches and a half in length respectively. Microscopical examination of the small gut and ligament proved negative as to malignant degeneration, section through adhesions and points of changed nutrition showing a simple inflammatory process.

"The large gut was two inches and a half in diameter at the site of the tumor and an inch and a half at the site of uninvolved area. The tumor extended two inches and a half longitudinally and encircled the entire wall of gut, occluding the lumen so that only the tip of a finger could be introduced. Upon section the tumor appeared dull white, and presented softened patches showing degenerative changes. A portion of the growth adjacent to the mucous membrane was examined and proved to be composed entirely of small round cells, without definite arrangement, with here and there a newly formed blood-vessel, establishing the diagnosis of small round-celled sarcoma. The cells extended between the muscular fibres, involving the intermuscular sæpta, and in places reached to the mucous membrane. In a section of the tumor itself there were found many degenerative areas in which the nuclei of the cells stained badly; other cells appeared disintegrated. The growth appeared to commence from the peritoneal surface of the gut, thin parts of the tumor showing more marked retrogressive changes; the area adjacent to the mucous membrane showing more clearly defined cells and the absence of softened patches."

Notwithstanding the several steps of the operation were taken with reasonable precision, the time consumed being twenty-seven minutes, the patient's reaction was not good; the heart continued depressed, seeming to require strychnine stimulation for a month, after which her natural vitality slowly returned. The larger or colon button was passed after five days, the smaller or ileum button not appearing until May 17th, twenty-six days after its insertion. With the appearance of the last button, the colicky pain, which had disturbed the patient since operation, ceased. It has occurred to me that perhaps the presence of the button in a loop of intestine, unable to dislodge it by reason of its weight, may have been a factor in the continued depression manifest.

At this time, over nine months from the date of operation, the patient is reported well by her physician, with no evidence of the return of the growth.

It is not my intention to enter into a discussion of the advantages or otherwise of the innumerable individual methods of intestinal approximation and suture, good, indifferent, bad, or curious, which have been proposed and urged upon the profession from the time of Ramdohr down; nor do I assume that the Murphy button leaves nothing to be desired as a means of securing union in hollow viscera.

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* Read before the Medical Society of the State of New York at its ninety-first annual meeting.

The desiderata in intestinal anastomosis are end-to-end approximation, accurate coaptation, a non-contracting scar, with rapidity and ease of execution. All these requirements seem to be met in the Murphy method, the last proposition being particularly well illustrated in the case of a babe eighteen months of age, which I was called upon to operate a short time since, *in extremis*, the result of a complete obstruction due to cystic degeneration of the head of the colon. The collapse was somewhat relieved by the ether. Upon opening the peritonæum the collapse was complete, the heart continuing to act only when the patient was suspended by the feet. In this inconvenient position four inches of the colon were excised, the anastomosis completed, and abdomen closed in twelve minutes. The patient rallied, but succumbed on the sixth day as the result of perforation at a point which had been noted as suspicious after the approximation was done, yet was not interfered with, owing to the precarious condition of the patient.

Thus far no operation for intestinal approximation offers such a flattering record of results. In forty-eight cases of resection reported up to 1896, only three patients died, or 6.25 per cent., while thirty cases of resection of malignant disease are reported with seven deaths, a percentage of 23.33. It may be urged, perhaps reasonably, that the cases reported are not typical of acute obstruction, yet they are probably as correct and strangely in contrast with those of Senn, whose observations show a mortality of fifty-eight per cent.; or of Curtis's collected cases, numbering three hundred and twenty-eight, operated since 1875, showing a mortality of sixty-nine per cent. Weir reports a mortality of a hundred per cent. in thirty-five collected cases of resection with primary suture. Reichel gives the mortality in primary section and suture as seventy-five per cent., placing the mortality in secondary operations at thirty-seven per cent.

A large portion of cases of intestinal obstruction come under the observation of the surgeon so late that no surgical procedure, however clever in its conception or expert in its technique, is of avail as a life-saving measure; yet this very consideration makes correspondingly valuable the procedure which may be executed with the greatest rapidity, provided its disadvantages are not such that ultimate success is unduly jeopardized. In the vast majority of cases of acute obstruction, the operator, by reason of the precarious condition of his patient, when narrowed down to the question as between end-to-end suture or a lateral anastomosis with either bone, rawhide, potato, or other plates (between which, by the way, there is little to choose in point of excellence as to efficiency or speed), or any other of the mechanical contrivances, selects that procedure which offers the speediest results compatible with other needs in the case.

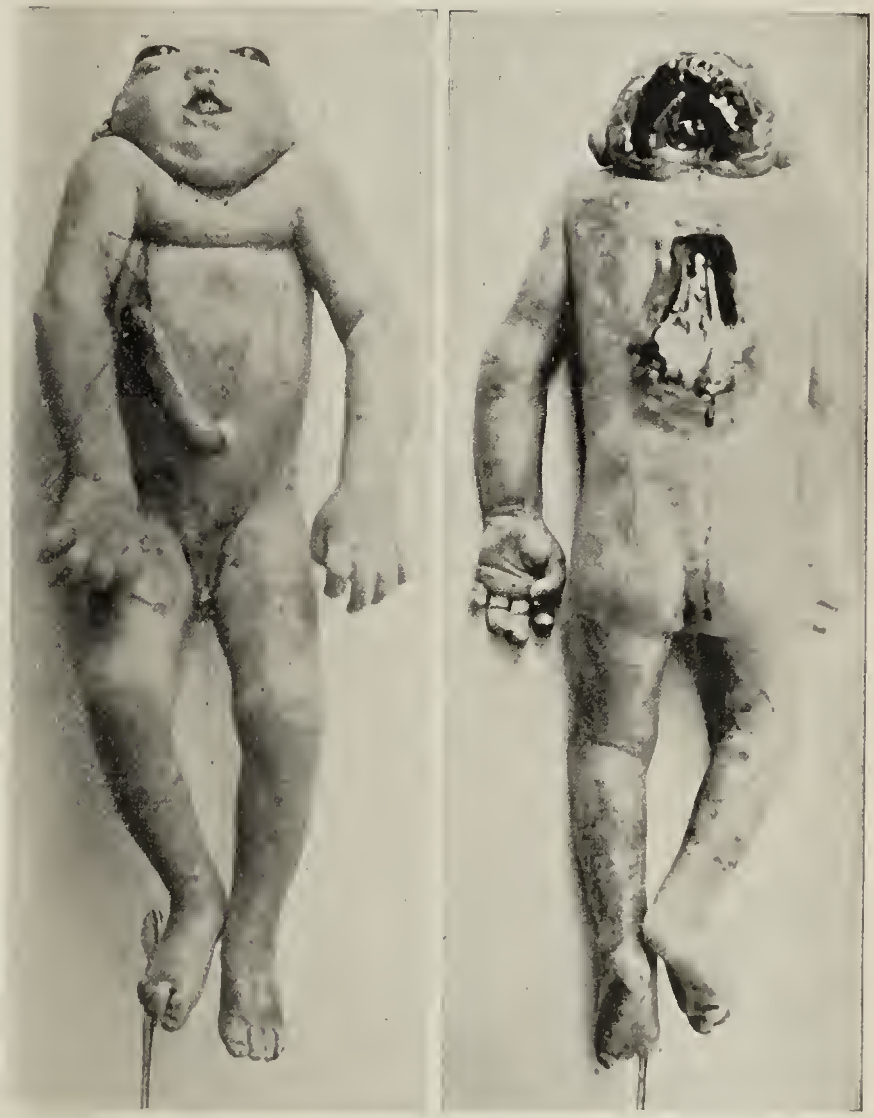
In my opinion, no method as yet proposed accomplishes an intestinal anastomosis with the same rapidity and certainty as that provided by Dr. Murphy, of Chicago, with his button devised for the purpose. Although the Murphy button is somewhat complex in its mechanism and may get out of order, it has practically demonstrated its superiority, when used in the average case of acute intestinal obstruction, in the much-lowered mortality rate obtained by its use.

EXENCEPHALIA AND SUPPLEMENTAL SAC.

By IRVING MILLER, M.D.,
BALTIMORE.

While the above-named monstrosity is seen by men who are in active obstetrical work, and may not, therefore, be considered rare, yet I think it best to place on record my only case in an experience of sixteen hundred births.

The woman was to all appearances in perfect health during her pregnancy, which was her first. The only thing noticeable was the extreme size of the abdomen, as well as the pronounced rotundity of the same. Her age twenty-five, well developed, and in no sense anything present indicating any deviation from the beaten path of a primipara. Dr. Britton, her attending physician, was called twenty-four hours before I saw the case, and found her in pronounced labor. Os dilating and dilatable. Bag of waters formed. After waiting several hours, and only very ineffectual and migratorylike pains occurring, he ruptured the presenting membranes, upon which there escaped about a pint of liquor amnii. Soon another tumor presented at the os, which, from its extreme tenseness, he considered the head. The abdomen had not diminished in size. When I saw the case, at his request, I found this same hard, tense tumor, and could not de-



fine the outlines of the fœtus. I determined, however, to puncture and evacuate the contents of the tumor, whatever it might be, thinking it might be an extreme case of intra-uterine hydrocephalus. After proper preparation I ruptured the membranes, and there was an immediate gush of water. From this fact we lost much of the escaping fluid; but besides this there was received in the vessel two gallons. After this flood I immediately caught a foot and extracted the fœtus which is illustrated, having a total deficiency of both cerebral hemispheres as well as an open spinal canal, beginning about the fourth dorsal vertebra and terminating at about the first lumbar. Otherwise the fœtus was well developed and normal in every respect. The death evidently occurred during delivery or just prior. It weighed nine pounds and a half.

The next case of deformity was a hypospadias. Mrs. M., sextipara, had been temporarily insane during her fifth pregnancy, which terminated three years previous. Her social condition was the very poorest, and want of food many times was her experience. Her sixth labor was normal, and child healthy in all respects except the deformity of the sexual organs. Here we had a hypospadias. On ordinary inspection there were all the gross appearances of the female. Close inspection, however, showed the two labia to be a split scrotum, which split was exactly in the rhaphe, and on each side there was found a testicle. The penis, represented by the glans only, was very poorly developed, and immediately beneath it opened the urethra. The fissure between the divided scrotum was covered with mucous membrane, and secreted a fluid similar to the mucus of these regions. The child is now eight years old, and is normal in all other respects. The testicles and cord are easily distinguished. The glans has not developed, and may easily be mistaken for a clitoris.

Deficiency of the Abdominal Wall.—An English woman in labor for the seventh time; this the fourth time that I had delivered her, when she gave birth to an infant with a great deficiency of the abdominal wall. The cord and umbilicus were situated in the section over the liver. The deficiency measured, from pubes to xiphoid, three inches, and laterally three inches and a fraction. The whole of the colon, the small intestine, the bladder, the greater portion of the stomach, and a large portion of the left lobe of the liver, were exposed, and, in fact, were all replaced in the abdominal cavity by me, having tumbled out while I was turning the child to deliver. The deficiency was so great that I could not coaptate the edges even with force, for I wished to pare the edges and make an attempt to close the opening. The woman was delivered on the hottest day in summer. The only thing done was to cover the protruding viscera with gauze kept moist in a weak boric-acid solution. The child nursed and lived a week. It had normal stools and visible intestines. It died on the seventh day, apparently of inanition. Another instance, as a friend remarked, of the wonderful resources of the English constitution.

1927 St. Paul Street.

A Remedy for Paroxysms of Sneezing.—Dr. Marcus (cited in the *Gazette hebdomadaire de médecine et de chirurgie* for March 28th) recommends firm compression of the alæ nasi upon the septum, between the thumb and the forefinger, continued for from ten to fifteen seconds, during which time breathing may be performed through the mouth. If there is still any tickling or renewed sneezing, the compression has not been kept up long enough; consequently it should be repeated. This treatment applies to sneezing not dependent on coryza.

CARDIAC DISTURBANCES FROM GASTRIC IRRITATION.

By H. ILLOWAY, M. D.,
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FORMERLY VISITING PHYSICIAN TO THE JEWISH HOSPITAL, CINCINNATI, ETC.

(*Concluded from page 562.*)

It is a well-known anatomical fact that the great nerve of the heart, the vagus, has also a large distribution over the stomach—is, in fact, the main nerve of that organ; the right vagus, with branches from the left, being distributed over the posterior surface, and the left vagus over the anterior surface of the stomach. This nerve, which supplies so many important organs, is the great regulator of the heart, and it performs this function by its inhibitory influence, its powers to arrest action. It is not necessary to go into details as to this sphere of influence of the nerve and the manifestations thereof; this is ancient knowledge recorded in all text-books of human physiology.

It can be readily understood that an irritation of the ultimate gastric filaments of the nerve conveyed upward to the centre may be reflected back upon the heart and produce the same effect as when an interrupted current is sent through it—namely, an arrest of cardiac action.[*] That this is so is demonstrated, I believe, by the well-known laboratory experiment of inhibiting cardiac action by striking with the handle of a scalpel the base of the intestine of a frog.[†]

On this ground the mode of production of the murmurs in Cases III and IV becomes very evident. We have, as a result of the irritation conveyed from the stomach and reflected through the cerebral centre upon the heart, an inharmoniousness of action of its various component parts. The correctness of this view appears demonstrated by the reduplication noticed in Case IV.[‡]

That a valvular murmur may be produced by mere functional disturbance is now well established and needs no further proof.[#] The reflex effects of irritation in the stomach upon the heart have already been noted by the older writers, and Macque,[||] referring to this, quotes one of his patients as saying that "he would be well if he did not eat."

Huchard,[△] treating of the pathogeny of the reflex pseudo-anginas, sums up as follows:

1. Changes in the vagus nerve at its origin may give rise to symptoms of irritation in any of the organs innervated by this nerve.

2. The irritation of a group of peripheral branches

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[*] Foster. *Human Physiology.*

[†] *Ibid.*

[‡] See Walshe. *Diseases of the Heart and Aorta.* Sansom. *On the Diagnosis of the Diseases of the Heart.* Loomis. *Physical Diagnosis.*

[#] *Ibid.* and Stokes. *On the Diseases of the Heart and Aorta.* See. *Loc. cit.*

[||] Quoted by Huchard. *Maladies du cœur.*

[△] *Loc. cit.*

may produce disturbances in any one of the regions innervated by the nerve or even in the nerve-trunk itself.

Baumgarten,* speaking of the mechanism of allorrhythmias and arrhythmias, says that they may depend upon inhibitory action of the vagus—*i. e.*, that they may be the manifestations of irritation of that nerve.

The intermittence, omission, in the beats of the heart during a more or less prolonged period of cardiac action is rather more difficult of explanation. It might be assumed, however, that a current of irritation, if we may so call it, being sent along the nerve, it becomes insusceptible to such further currents until the first has been fully discharged from the centre and until that portion of the nerve mainly affected (the gastric filaments) has recovered its normal tone.

The pathogeny of the palpitation, whether merely a subjective sensation or an acceleration of cardiac action, for that it not infrequently is in these cases, is not so clear. It may be produced through the sympathetic system (through the plexus of Meissner and Auerbach), which is the accelerator of the heart, or, perhaps, even through the vagus, either in that the accelerator fibres alone, which Schiff professes to have found therein,† are irritated, or that the irritation is but a slight one.‡

However that may be, there is no question that palpitation may be produced reflexly from a gastric or intestinal irritation, and is referred to by various writers.#

It is generally recognized that dyspeptics are very labile in their emotions, being readily and quickly moved one way or the other. In my paper on nervous dyspepsia ‖ this is referred to as constituting part of the symptomatology. Now, as the palpitations are more commonly seen in those cases where such emotional instability predominates, as has been noted in Case III here, it is not improbable that the acceleration of the cardiac action may frequently be dependent upon the emotions △ rather than directly upon gastric irritation.

Painfulness of the præcordium, resulting from indigestion, as in Case II, is already mentioned by the earlier writers on heart troubles. Reeder ◊ says: "Indigestion, whether due to a primary affection of the stomach or consecutive to other maladies of the liver or other abdominal viscera, or even of the pelvic organs, excites frequently a pain more or less acute in the region of the heart that at times may extend to the shoulder or even to the forearm. Palpitations and irregularities may accompany this."

It is more difficult to explain the pathogeny of this præcordial painfulness. It would be readily understood if we were to assume that it lay in the stomach, in a pathological condition of the gastric mucous membrane, especially that of the cardia, or in the gaseous distention of that section of the stomach, not an uncommon phenomenon in these cases. However, I do not believe that we are warranted in any such assumptions. In my own experience I have seen this painfulness of the heart region more frequently in strong smokers, and even in moderate smokers, in whom some unusual excess would bring it on, than in cases of indigestion pure and simple, wherein this factor could be eliminated, as in Case II here.

It would be an easy solution to say that it was located in the heart. This, however, is equally unwarranted, for in all these cases all the symptoms that accompany painfulness of the heart and are intimately connected therewith * are altogether wanting.

It is more than probable that there are several factors to be considered pathogenically active thereto—namely, a nervous one and a mechanical one. The former is the irritation of the sensitive filaments of the various nerve branches proceeding from the stomach; the latter, the gaseous distention of the cardia, with perhaps a hyperæsthetic condition of the gastric mucous membrane, and a distention by flatus of the left colic flexure, by which a pushing, pulling, and dragging sensation is given rise to. As the one or the other of these factors predominates so will be the pain, sometimes more neuralgic in character, at other times like that of muscular rheumatism.

As in all the departures of the system from the normal, much, as to the particular form of disturbance resulting, is no doubt dependent upon the form of peripheral irritation, whether it is an acute one supervening upon a previously healthy organ, whether it is a chronic one, or whether it is a chronic one with provoked exacerbations. Much may also depend upon the strength of the irritation, whether it be great or whether it be but slight.

III. PAINFUL NEUROSES.

CASE V.—F. J. J., September 10, 1891. A druggist by profession, now a general freight agent; aged thirty-seven; married for twenty years. Has his second wife now. Very corpulent; weight ordinarily, two hundred and six pounds; now a hundred and eighty-six. Height, five feet six inches. Hair inclined to gray. Never had any venereal disease. Mother dyspeptic; somewhat rheumatic also. Father healthy. He himself has never been sick, but inclined to nervousness.

Some ten years ago he had spasms of the lower jaw, which would come on paroxysmally, but, after taking much medicine and after consulting a number of physicians, they finally passed away.

During the past six months he has had attacks like the following: A cold perspiration breaks out on the forehead, his limbs become cold, the circulation seems to stop in his legs; his pulse is feeble; there is shortness of breath; it seems to be leaving his body, and he gives a great gulp to hold it in; pain over the præcordium;

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* *Transactions of the Association of American Physicians*, vol. iii. Disturbances of the Heart Rhythm.

† Landois and Stirling. *Human Physiology.*

‡ Foster. *Human Physiology.*

# Landois and Stirling. *Loc. cit.*

‖ *Medical Record*, January 5, 1895.

△ Landois and Stirling. *Loc. cit.*

◊ Quoted from Huchard. *Loc. cit.*

* Sée. *Loc. cit.*

a feeling of fright and anxiety comes over him, and he thinks his last moment has arrived. He says that it seems to him as if his heart would stop. These attacks come on at frequent intervals of the day, and he has become so alarmed lest he face death suddenly that he never moves out of his office without a companion and a whisky bottle. He takes a drink out of his bottle, and in a few minutes is himself again.

He had consulted the most eminent practitioners in our city, who had looked upon these paroxysms as angina pectoris and had prescribed nitroglycerin. Another physician had given nitrite of amyl, and still another digitalis. The one consulted last had prescribed bromides.

Status Præsens.—The patient has a doughy appearance of countenance with a pallid color; something of a cyanotic cast in it. Structures flabby; tongue coated heavily; appetite irregular; may not eat much through the day, but will eat the more at night. Has great fondness for goose livers, deviled hams, lobster salads, smoked tongues, *marinirte* (pickled) herrings, etc. Generally eats a very late supper and then takes considerable quantities of beer. He may wake up in the night and have one of these attacks, but he has his whisky bottle always ready under his pillow. He gets through with considerable whisky in twenty-four hours. His bowels are regular; his urine normal. He has a pain on the right side over the mamillary line, over the liver. He has a gnawing, scratchy sensation in the epigastrium. A careful examination of the thoracic organs revealed absolutely nothing. As he was a good chemist I relied upon his examinations of his urine. From the history received, and the results of the examination, I concluded that the stomach was the *fons et origo* of the trouble, and addressed my treatment to this.

A rigorous diet was at once directed, and all excesses in late eating absolutely prohibited. Diet: Milk, bread (stale), broiled steak. Absolutely no beer. May have a glass or two a day of old Rhine wine and but little whisky.

℞ Strychninæ sulphatis .... gr. $\frac{1}{10}$;
Sacchar. lact .... ℨ ij.
M. Triturat. ben. et ft. pulv.; divid. in part. æqual. no. x.
Sig.: One powder every four hours.

September 16th.—Is somewhat improved. Attacks not as frequent through the day and none at night. The attacks not as severe—*i. e.*, he thinks that he does not get as cold as before. He can not bear the milk; it curdles in his stomach into hard lumps and causes him to vomit. His stools are black, tarry, and exceedingly offensive. To correct this latter feature I prescribed for him some small doses of blue mass with rhubarb, and, as he was also nervous, afraid of attacks coming on, I ordered him ten grains of asafœtida, three times a day.

21st.—He is doing much better; stools natural in character; the crawling feeling over liver and stomach has disappeared; not as much acidity of stomach. Friday and Saturday he felt excellent, but last night he again filled himself with beer and his stomach is again sour.

To continue asafœtida and to have sodium phosphate twice a day.

24th.—Take soda twice a day and also tincture of nux vomica, five drops, three times a day.

27th.—Came in to-day saying he was frightfully bad; for the last two nights did not sleep well; had frequent paroxysms and required much whisky. Denied having committed any indiscretion, saying he had taken nothing (three days before) but a few salt sardells and a couple of glasses of wine.

On the 28th he came in again, feeling somewhat better, and this time confessed that on the evening when he was again seized with his bad spell he had bought a half dozen Dutch herring and his wife had prepared them in the German fashion (*marinirt*), and he had eaten a great quantity besides of sandwiches. An hour and a half after the eating he took sick and had a frightful time since. I ordered him—

℞ Bism. subnit .... gr. v;
Sodii bicarb. .... gr. iij;
Strychninæ nitratis .... gr. $\frac{1}{100}$;
Caffein .... gr. j.
M. Ft. pulv. no. j. Sig.: Ter hora.

And for the paroxysm, instead of whisky

℞ Lactopeptin .... ℈ j;
Pulv. capsic .... gr. j.
M. Divide into five powders.

Strict injunction as to diet. Modified it to tea instead of milk. Also allowed a little chicken broth.

30th.—Much better. Continue treatment.

December 13th.—Was again called to see J. to-day. He was well up to within a few days, having no paroxysms. His present illness is a severe attack of influenza.

Summer of 1892.—I saw him again by chance and he was feeling excellent, but afraid that the warm, sultry weather of the place might cause a return. I told him it would not, but if it were possible for him to get away, a trip to Michigan would do him good.

I saw him in March, 1894, again. He has kept well and never has had a return of his former trouble.

It might at first glance be taken that we had merely a case of persistent sick stomach to deal with here, and that the symptoms recounted—the breaking out of the cold sweat, the feeling of coldness in the extremities, the weakening of the pulse—were but the manifestations of this. Moreover, the history of the patient, the gluttonous excesses committed by him, and the quick though temporary relief obtained by taking a drink of whisky would seem to point very clearly thereto. However, such a conclusion would be an error in diagnosis, as a more careful consideration readily shows. It is not a case of sick stomach, of nausea, which is not at all complained of, not even mentioned by the patient, and which does not in any way account for the really important phenomena of the symptomatology, but one of angina pectoris, minus the most prominent and most characteristic feature—namely, the pain shooting up from the præcordium into the left arm and down the same to the finger tips. The præcordial pain, the sensation as if the heart's action were going to stop suddenly, the vasomotor phenomena in the lower extremities—the stoppage of the circulation in them and their growing cold—the sudden slowing and weakening of the pulse, and, above all, the anguish, *l'angoisse*, the feeling of impending, inevitable dissolution, is a syndrome of symptoms that pertain to but one pathological entity, the one already mentioned—to wit, angina pectoris.*

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* Huchard. *Loc. cit.*

It is this lack of that one feature by which this malady is generally recognized and the great prominence of others, rather unusual ones, that make the case one of very great interest.

Case VI.—(1882.) Mrs. L., aged twenty-two years, a woman of small stature—four feet seven inches; very spare. She is married three years and has had but one child, which is now over two years of age; she has used, and still uses, all means known to her to prevent conception. She has lived in the South all her life. She is lazy and will do no work; seeks only the pleasures of life. She complains much of her stomach, occasionally of her head; the stomach, however, gives her much trouble and makes her feel sick and nervous. Her bowels are always constipated. She has bad habits; she can not eat her meals during the day, as she is usually munching candy all the time; but at night, more particularly with company, she will eat whatever is brought before her; she will eat much and rapidly, and the richer the food the better she likes it, and drinks beer or wine or both, or even whisky and water. On top of all this she will take ice cream and cakes and nuts and more candy, with which she usually winds up the evening.

Status Præsens.—She is very thin; she is very nervous, inclined to be hysterical, especially so after one of her heavy suppers. She is very irritable, and will scold and fret and cry without the slightest cause therefor. Her tongue is very heavily coated with a yellowish-white fur; the breath is very offensive. She has no appetite; there is a feeling of weight in her stomach after eating, which may continue for a longer or shorter time, and frequently there is much oppression and difficulty in breathing; very often she has a sour stomach, and must take magnesia to obtain relief. Never vomits. The bowels are constipated.

Physical Examination.—Nothing discovered.

Diagnosis.—Atony of the stomach and of the intestinal tract.

I prescribed for her a strict dietary regimen and some medication to tone up the stomach.

She did very well, and in a remarkably short space of time her general condition was wonderfully improved. She had lost her nervousness, gained in flesh, and her bowels became regular. The headaches disappeared, and her stomach performed its functions normally.

In May, 1883, the family received company from the South. Soon her old habits were re-established—late hours, late lunches; restaurant meals of the richest dishes; much ice cream and cake and abundance of candy—and it was not very long till my patient was as bad as before. But she had no time to do anything now, not as long as she had company. In August she and her visitors were invited to spend the day in the country with a friend. The *menu* being just to her taste, Mrs. L. ate a large dinner; as she told me later, "she was so full she could hardly breathe." Shortly after dinner she went out driving; when she came home, feeling very warm, and still full from her dinner, she undressed, put on a loose wrapper, and threw herself in a hammock that swung on the porch. While thus lying there she was suddenly seized with an atrocious pain in her breast, which shot up to her shoulder and down the left arm to her finger tips; the arm felt numb as if paralyzed; she had a feeling of sinking, as if she were going to die the next moment. A physician was called, who at once gave her a hypodermic injection of morphine. She was brought to her home in the city, and later that night, about 9 P. M., I saw her and heard the story of the attack as above given—a typical attack of angina pectoris. She came under treatment again for her stomach. Improvement was much slower this time. A painfulness of the præcordium, severer at times, continued for a long time, and a dread that she was afflicted with heart disease seized upon her and made her melancholic. She had some marked hysterical attacks.

March, 1884.—She is very much better. She is again pregnant.

June 15th.—She is in excellent condition and has lost her nervousness entirely. In due time she was delivered of a stout, healthy child, after a short and rather easy labor.

It will be seen that I had this patient under constant observation for a long time, and I can truly say that during that period there was no recurrence of the attacks of angina pectoris. However, in the fall of 1885, owing again to a relapse into her former habits of life, she had a severe attack of gastralgia, of which there were several repetitions.

The non-recurrence of the paroxysms of breast pang after the first is a feature that alone makes the case worthy of record.

It disproves the objection that might be raised that the attack was based upon the hysterical substratum already noted in the patient;[*] moreover, her whole history seems to prove the correctness of the position here taken, for it shows that her nervousness was but secondary to derangement of her stomach, and that when that organ was in order her nervousness disappeared.

The two cases, especially Case V, wherein the usual and approved treatment failed, and only the treatment addressed to the stomach brought relief, demonstrate beyond the possibility of a doubt, and more conclusively than many other cases that are adduced as evidence, that this neurosis, angina pectoris, may be but a reflex manifestation of gastric irritation.

With the exception of the pseudo-anginas, which have received ample consideration from most writers on the subject of "the diseases of the heart and aorta" and but lately by Osler,[†] the other forms of reflex functional disturbances, although already noted in a measure by Abercrombie,[‡] have received but scant notice from English writers, and that only incidentally here and there. Thus Abercrombie, as already mentioned, records his observations of palpitations; Sansom,[#] in a paper on the irregular heart, mentions dyspepsia as one of the causes thereof, and Baumgarten [‖] numbers it among the factors of intermittence. Murmurs dependent on functional disturbances are recognized by all authorities, but only Abercrombie [▵] states plainly that they may result from reflex irritation from the stomach.

As to any special features by which cardiac disturbances of gastric origin can be recognized, whether they differ in any way from functional disturbances that result from irritation elsewhere, I am not prepared to speak. The cases that have come under my observation have been far too few in number for the determination of this point. In fact, looking at their pathogeny, as already set forth, there is no reason to assume that they differ from other forms of functional disturbance. I myself made the diagnosis upon the usual characteristics that distinguish functional from organic cardiopathies; as to the particular seat of the irritation, by the special symptoms pointing to the stomach, and the connection between the two, and by the apparent relation of the one to the other, as can be readily seen in the histories of the cases recited. Abercrombie also attaches much importance to this point, the "obvious connection with disorders of the stomach and relief by treatment directed to that organ." *

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[*] Sée. *Loc. cit.* Huchard. *Loc. cit.*

[†] *New York Medical Journal*, 1896.

[‡] Abercrombie on *The Stomach*, Philadelphia, 1888.

[#] *Lancet*, London, 1892, vol. ii.

[‖] *Loc. cit.*

[▵] *Loc. cit.*

As regards the palpitations, Abercrombie has noted this feature more particularly, that "the symptoms are more apt to occur while the patient is at rest, especially after meals, not being increased by bodily exercise, but rather relieved by it, and not being excited by such bodily exertion as we should naturally expect immediately to influence a disease of the heart." †

Potain ‡ has described another form of cardiopathy as due to irritation in the gastro-intestinal tract, in the liver, or in the bile ducts—namely:

IV. Dilatation of the Heart.

The right heart is the part more particularly affected; occasionally it may be the whole heart that is involved. This dilatation is at first but transitory; after repetitions, however, it may become permanent. Hypertrophy may result. Destureaux,# who studied this phenomenon with especial reference to its gastric origin, reports the case of a young woman afflicted with ulcer of the stomach who, in the space of three months, had six attacks of dyspnœa with temporary dilatation of the heart in each attack.

When of gastric origin the attack comes on after the ingestion of food, and it is not at all necessary that a large or gross amount should have been taken. Potain saw it come on after the eating of a biscuit, of a salad leaf, alone. Of course, in these cases a peculiar susceptibility of the heart with a marked irritability of the stomach must exist to produce so readily so grave a disturbance from so trifling a cause.

The symptomatology is this: Shortly after the eating of food the patient experiences much gastric oppression; dyspnœa supervenes, and with it the dilatation of the heart.

This latter condition can be recognized both by percussion and auscultation. On percussion the transverse diameter of the heart is found increased, to the right more particularly, without any depression of the apex. On auscultation we find the cardiac beats rather feeble, and the sounds of the right heart predominant over those of the left, a fact demonstrated by the accentuation of the second sound at the base over the point of auscultation of the pulmonary artery (second intercostal space, left border of the sternum). Later on we may have reduplication—*i. e.*, instead of the usual synchronous action of the two sets of valves, the aortic and the pulmonary, we have a distinct and separate action of each, the valves of the pulmonary artery anticipating in closure those of the aorta. At a later period a *bruit de galop* is heard over the right heart (in contradistinction, according to P., to the one heard over the left heart in cases of chronic interstitial nephritis with cardiac involvement).

As regards the pathogeny of the process, it may be said that it is maintained that overdistention of the stomach, with the consequent embarrassment of the respiration and the circulatory compression caused thereby, is not at all a factor, for, as already stated above, Potain observed this manifestation on the part of the heart in cases where no such overdistention occurred. According to F. Franck, the mode of production is as follows: The terminal filaments of the nerves supplying the stomach (pneumogastric and sympathetic) are irritated. This irritation is conveyed to the nerve centres; from thence it is reflected by way of the sympathetic filaments (not the pneumogastric) in the form of a vasomotor excitation upon the pulmonary vessels. These becoming constricted, the onward flow of the blood current is obstructed, the pressure in the pulmonary artery is increased, and progressive distention of the right heart follows.*

I have myself not met with such a case. It is possible, however, that the suffocative attacks experienced by D. V., Case IV, which I regarded as hysterical manifestations, may have been of this character, but remained unrecognized by me, as I saw the patient some time after they had passed over and did not think it necessary then to examine the chest at the time.†

Experimental study has fully confirmed clinical observation that:

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* *Loc. cit.*

† *Loc. cit.*

‡ Congrès de l'Association française, Paris, 1878. Same Congress, Montpellier, 1879. See *Gazette hebdomadaire de médecine*, etc., September, 1878, and September, 1879.

# De la dilatation du cœur droit de l'origine gastrique. *Thèse de Paris*, 1879.

* *Gazette hebdomadaire de médecine*, etc., No. 22, 1880. See also on the whole subject, G. Sée, *loc. cit.*

† It is more than likely that, in the cases referred to by Dr. Robert Newman (in the discussion upon the paper)—"Dr. Robert Newman said that he was reminded by the paper of some post-mortem observations made by him in 1867, on cases of sudden death preceded by some feeling of uneasiness and cyanosis. The post-mortem examination showed no cardiac disease, but the stomach distended with a large quantity of undigested food. The patients were all very stout, and the fat pressed as much upon the heart as did the stomach. There was no evidence of brain or kidney disease. Had these persons been given an emetic promptly, death might have been averted" (*American Medico-surgical Bulletin*)—a dilatation of the right heart was the cause of death. The symptoms seem to point thereto, and indeed such dilatation would be a dangerous condition to supervene in persons of the character described, in whom the muscles have lost much of their elasticity.

1. An irritation may set out from the nerve filaments of the stomach and travel thence to the nerve centre.

2. Hence it may travel by way of the sympathetic and affect the lungs (as already described above), and the heart secondarily through the intermediation of the lungs.*

That it may be reflected upon the heart directly by means of the pneumogastric nerve fibres, without at all affecting the lungs, is as yet only clinical observation.

En parenthèse it may be said here that under the prompt action of an emetic the dilatation of the heart disappears at once with the gastric oppression.†

The importance of the recognition of this form of cardiopathy, cardiac disturbances as reflex manifestations of gastric irritation, can not be overestimated. It forms a very important chapter, one that has been much overlooked, in cardiac pathology.

The cases here reported are strikingly demonstrative, and are distinctly the opposite of the series of interesting cases reported by A. Leared,‡ wherein the gastric phenomena were but reflex manifestations of cardiac disease.

Furthermore, they lend additional emphasis to the words of that eminent clinician in matters of the heart, Stokes, who, though he knew not particularly the gastric, had already recognized the hepatic form of cardiopathies: "The practitioner can not be too careful in committing himself to a diagnosis of organic disease of the heart in certain cases of the combination of the cardiac and hepatic symptoms, especially when the disease exists in persons not much advanced in years. For we shall see that under treatment calculated to relieve the liver and the digestive apparatus the symptoms and signs of the dilated and irregular heart may suddenly disappear, and this, too, while an enlarged state of the liver still exists. In these cases murmur is rarely if ever present, the signs being an extremely irregular action of the heart with clear and extended sounds, jerking impulses, and corresponding pulse.#

"IN DARKEST AFRICA."

By LOUIS W. FLANDERS, M. D.,

DOVER, N. H.

"I've had sore eyes for some time, and I've been doctoring them myself, but they don't seem to get any better; and so I've come to you, doctor, for the eye is such a delicate organ that I don't believe anybody ought to fool with it much."

What oculist has not heard this speech over and over again? Interrogate such a patient as to what he has done for his eyes, and his reply will be something like this:

"Well, first I bathed them in a little weak tea, and then I tried alum curd for a spell, and that didn't seem to do any good. Then I steeped plantain leaves and used the water for a wash, but what has done 'em most good is tobacco juice. It smarts awfully, but they are always better after it."

And yet "the eye is such a delicate organ"! A patient comes to us who has been operated on for strabismus. He almost invariably says: "The doctor took my eye out upon my cheek and cut something and put it back."

I once inserted an artificial eye for a "Canuck" Frenchman, a wood chopper. As soon as the artificial eye was in place, he clapped his hand over the sound organ and exclaimed, in great disgust, "I can't see damn t'ing!"

In the light of the wonderful "newspaper medicine" of the day, I can excuse that ignorant man his mistake a great deal easier than I can more intelligent people their wrong ideas concerning the healing art. It is a common thing here in southern New Hampshire to call the small furuncles upon the margin of the lid "pigstyes." It seems to be a settled fact that there can be no "stye" without a "pig" in it. Given a light-complexioned person with white eyelashes and furuncles of the lid, and I admit that he does bear a striking resemblance to a blue-eyed pig with blepharitis marginalis. Perhaps the term comes from this resemblance. I once saw an old Irish woman with purulent ophthalmia. When first seen the pus was running down her cheeks, and she said her trouble was "Earwax running out at the eyes." This was supposed to be a joke at first, but upon investigation it turned out that she really thought that she had a wax factory in her head and that the product had been diverted into the wrong channel. Again, a young woman reported that she had to wear "stone glasses." A careful drawing out elicited the further information that while straining at sewing "she broke her sight off short, and had to have some stone glasses made to draw it down again." A case of myopia fitted with pebbles, probably.

In the country we have no convenient operating rooms with adjustable tables and skylight. We use an old lounge, the kitchen table, or anything we can get. I operated for cataract a short time ago with the patient lying upon an ironing board stretched across two chairs. The patient was obliged to keep still or fall off, and the suggestion was a good one—he remained absolutely quiet. In like manner, we rarely have skilled nurses, but depend upon the nearest relative, or sometimes upon the "quack" nurse, who holds her services at "one dollar a day and found." For this latter class I have a profound respect, and always treat their opinions with the greatest consideration. Such a one nursed a cataract patient for me a while ago, and during one of my visits the following conversation took place. She said to me:

"Doctor, my father had cataracts on his eyes."

"Is that so?"

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* Morel. Recherches experim. sur le cœur droit. *Thèse de Lyon*, 1879. F. Franck. *Loc. cit.*

† Sée. *Loc. cit.*

‡ *Loc. cit.*

# *The Diseases of the Heart and Aorta.* Edition of 1855, p. 509, footnote.

"Yes, and he cured 'em himself."

"Indeed! How did he do it?"

"Well, he used to throw fine salt in his eyes every morning."

"Is it possible!"

"Yes, and, doctor, you ought to have seen him. He'd throw it in and then run acrost the kitchen and jump up into the air and spat his hands together and groan and take on terrible!"

"I can easily believe you, madam."

"But it cured him; it et 'em off finally. My! but the water'd run down his face in streams! They's few thet would hev the courage to do that."

I could only shake my head in melancholy sadness at the decline of fortitude in the world, and say: "That is true."

And yet "the eye is such a delicate organ." The "absorption treatment" for cataract is less painful and quite as efficacious as the method described above.

"I have cataracts," said a woman to me some time ago.

"How do you know?"

"Doctor Blank told me so."

"How did he examine your eyes?"

"He sat in his chair, about ten feet away, and looking at me steadily, said: 'Madam, you have incipient cataracts.'"

Ophthalmoscopic examination showed the media to be perfectly clear. S. + 2 ⊂⊃ C. + 1, axis 90°, before each eye gave a vision of $\frac{6}{6}$. A year and a half later the woman returned, having lost her glasses.

"I wish you would just look in my eyes once more to be sure there are no cataracts coming," she said. I did so, and found a few streaks of opacity just creeping in from the circumference of the lenses. Honesty compelled me to admit the fact.

"There! I must go right back to Dr. Blank."

What was there to be said? Fate was against me, so I simply replied: "As you please."

Dr. Blank will get the credit of having made the diagnosis a year and a half earlier than I. Against the advice of the regular profession, that woman will go back to the quack, and, after he has "absorbed" every cent she has, she will be received into an infirmary as a "charity patient" and operated on for nothing. By the way, Dr. Blank advertises to cure glaucoma and atrophy of the optic nerve under the heading—"No knife; no risk." What if some poor fellow goes to him with acute glaucoma and loses the only chance for sight he has? Will the State do anything about it? No; on the contrary, her legislators will kill the "medical registration" bill on the ground that it is for the benefit of doctors only.

A man came to me who had been deaf twenty years. He was so bad that we could converse only in writing. An absolutely hopeless case. I found afterward that he was one of Dr. Blank's "cures," and had had his photograph in the newspaper with a testimonial.

Bang the tom-tom, Mr. African, and drive out the evil spirit of disease. Poor fool! you know no better!

Many of the laity are gifted with peculiarly vivid imaginations.

"I went to see Dr. So-and-so [an eminent oculist] about my eyes, and he took those lenses out that you fitted me and threw them on the floor and stepped on them."

Imagine, if you can, the most dignified and undemonstrative gentleman of your acquaintance dashing a pair of glasses upon the ground and grinding them under his heel in a frenzy of righteous indignation, and you will have a correct picture of the case. This story is quite common. I have heard it several times of as many different oculists. Three times in six years have I found patients using their own urine as an eyewash. I have known a man to pull open his dog's eye and spit a mouthful of tobacco juice into it, with the idea that tobacco would "eat off the scum" of keratitis. I have had the pleasure of digging a disintegrated quid of tobacco out of a scalp wound, clapped in there by a bystander at the time of the accident to check hæmorrhage. Country practitioners will tell you that the cow-dung poultice has not gone out of date as an application to "broken breast," and that sheep manure and cider is still in vogue as a spring "blood medicine."

How shall we carry common sense and decency into this realm of darkness and superstition? People cling to their medical lore with as much tenacity as the African savage clings to his barbarous religious rites. Whose business is it to teach the laity that an eye can not be taken out and scraped and put back again; that urine is not advisable as a collyrium; that eyeglasses do not "pinch the nerve" nor "stop up the tear passage?" I used to think that it was the physician's duty to do this, and spent much valuable time in trying to point out such errors to people. They usually went away and told their friends that I "would know more when I got older." So lately I have given it up. I listen gravely to impossible anatomy, marvelous ætiology, and questionable therapy, and say nothing. But even this course has got me into trouble. A woman said to me:

"Doctor, I knew a little girl who had a running ear. It ran for about a year and then burst through on the other side and killed her instantly."

I followed my usual policy, and that woman, acting, I suppose, upon the axiom "Silence gives consent," told the story next time with the addition that "Dr. Flanders had seen several such cases."

The Western Ophthalmological, Otological, Laryngological, and Rhinological Association held its second annual meeting in St. Louis recently, and elected officers for the ensuing year as follows: President, Dr. B. E. Fryer, of Kansas City; vice-presidents, Dr. J. Elliott Colburn, of Chicago, Dr. F. M. Rumbold, of St. Louis, and Dr. A. E. Bulson, Jr., of Fort Wayne; secretary, Dr. Hal Foster, of Kansas City; treasurer, Dr. W. L. Dayton, of Lincoln. The next meeting will be held in Chicago on April 7 and 8, 1898.

THE RELATION OF HYPNOTISM TO THE SUBCONSCIOUS MIND.*

By GEORGE E. BILL, M. D.,
HARRISBURG, PA.

THE subject which it has been thought fit to discuss with the society at this time is one believed to be of very great import and latitude in the art and practice of medicine. So evident must this be to the thoughtful mind, that it would seem impossible, in the time allotted by the custom of the society, to more than enter the boundary of a field of inquiry the meaning and possibilities of which are so vast. Therefore only one phase of the topic will be emphasized—the subconscious or subjective mind.

The bald definition of the word hypnotism, strictly speaking, is the artificial production of sleep; but the tendency of the present is to extend its meaning, in order to include the various phenomena to be noted under the head of mesmeric, magnetic, or fluidic hypnotism, physical hypnotism, and suggestive hypnotism. These three forms may be used singly or together in medicine.

While there have been, in every epoch and in all climes, students and investigators, renowned or otherwise, in this broad domain, there is no basic fact observable in all their research which they themselves understood as capable of inherently formulating a working law explanatory of hypnotic phenomena. Mesmer formulated his theory of animal magnetism, but his methods savored of charlatanism to the uninitiated, and, apart from his manipulations and their undoubtedly curative effect on disease, no scientific cause could be discovered at that time, except as ascribable to the imagination of the patient. Braid, by his discovery that fixity of vision or fixed attention induced hypnosis, recalled the desire of the medical world to a further investigation of a tabooed study; but because the various phenomena therein unrolled could be attributable to physicism it was thought that a final quietus had been put upon the claims of Mesmer. As you know, in more modern times, however, there have arisen two schools of hypnotic research—Nancy and Paris. Both adopted somewhat the methods of Braid, but to the school of Nancy belongs the honor of first placing the study upon a proper basis in science, and of formulating a law. The school of Paris holds that the various phenomena of hypnotism pertain to neurosis, a conclusion obviously not always correct. Nancy, on the other hand, asserts that hypnotic phenomena pervade the most absolutely healthy organism. It is questionable if both together have not evolved laws of equal value out of the chaos obtaining in the times previous to their origin. Nancy has formulated the great law of suggestion, which underlies all actual scientific progress in the domain of hypnotism. On the other hand, the great name of Charcot and his gigantic labor have caused to be brought prominently before professional recognition and study that almost unknown realm, the subconscious mind. It is impossible to clearly perceive that the one is of value without the other—viz.: the law of suggestion and the subconscious mind. Both are of profound and equal importance, neither can do without the other, and both work together in both subject and operator, controlled or controller, in every hypnotic *séance*. Various are the means and methods employed to induce a condition of hypnosis. The loud command, the flashing mirror, the bright light, the forward or upward fixity of vision, the magnetic pass, the revolving chair, all have for their aim the subtending of the conscious objective mind, which can not *per se* be hypnotically influenced. It is to this last fact that it is particularly desirable to call your attention—viz., that it is what Thomson Jay Hudson so aptly denominates as the subjective mind, existent in all sentient life, that is always influenced by the law of suggestion, either orally or mentally expressed, and not the objective mind, for the latter can not be so influenced against its reason. This law of suggestion, so happily discovered, applicable alone to the subconscious mind, and a third fact in hypnotism, telepathy, to which your attention will again be called, explain as nothing else can the various phenomena of hypnotism. They are of fundamental value and pervade the whole question of hypnotism in medicine, and are of transcendent therapeutic import. As far back as the student can penetrate, a duality of mind has been recognized by the profoundest thinkers, and it would appear that modern research only emphasizes this ancient division as true.

The more commonly accepted division is known as the conscious and subconscious mind, but the most apt and most natural and distinctive phraseology, since it better accords with various symptomata of disease, would seem to be that of Hudson, who adopts as terms of distinction the words subjective and objective. He says in effect that the objective mind exercises its functions with its objective surroundings through the media of the special senses, and is that part of the mind necessarily connecting man in his entirety with physicism. By reason of its objective education it enables him to exist within his physical environment and its "highest function is that of reasoning." *

"The subjective mind takes cognizance of its environment by means independent of the physical senses. It perceives by intuition. It is the seat of the emotions and the storehouse of memory. It performs its highest functions when the objective senses are in abeyance. In a word, it is that intelligence which makes itself manifest in a hypnotic subject when he is in a state of somnambulism." †

The distinction herein expressed offers to your reader the best explanation, in its applicability, of the universal value of the law of suggestion in the various phenomena of disease. It would seem on profound thought that the subjective mind does, as Hudson asserts, "preside over the emotions and functions of the body," and as a corollary it may be added that it also controls the action of the sympathetic, if measurably so in the male, still more so in the female, by reason of her greater richness of sympathetic endowment; for in the deepest hypnotic stages the female observes through the solar plexus, the male through the pineal gland and medulla oblongata.

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* Read before the Dauphin, Pa., County Medical Society, January 5, 1897.

* T. J. Hudson. *The Law of Psychic Phenomena.*

† *Id. opus*, page 29.

Now, it is most instructive and most curious to observe that no physician and no patient are thrown into each other's contact in any walk of life, lay or medical, without these bases of hypnotism unconsciously becoming apparent, and it is this fact, of such wide significance, of such universal bearing, from the beginning of medical times until now, that the medical profession as a whole has either ignored, has been unconscious of, or has even unconsciously used in therapeusis. It is even illustrated in the placebo. That this is eminently true springs from the fact that the physician's attitude, his entire status, public or private, is one of command, of direction, of leadership, while that of the patient is one of submission to an ill, an attitude born of fear, which is an inductive hypnotic element of itself, a condition of entreaty that he be better, of hope that he be aided, of faith that he be cured. This obvious and suggestive fact in the above status being of such pregnant importance, how can we not observe then in this very condition of society a therapeutic buckler capable of fending the arrows of disease, functional or organic? Why, then, should the physician shoot the envenomed shaft of ridicule against so potent a shield from disease as hypnosis? If hypnotism has been synonymous with quackery, it should be no longer so regarded by the medical profession.

It has been found that there are in the main two general divisions of hypnotic effort. One makes use of the means above noted for its induction, and always presupposes a concentration on the part of the subject and operator, and demands the entire recognition of the operator by the patient and oblivion to all other externals, and is the form of hypnosis in most general use. This form demands also the conscious surrender of the subject to the objective will of the operator, and is objectionable therapeutically, because its practice leads to vacillating volition, except in selected cases, embraced under sexual perversion, alcoholism, morphinism, and criminal impulse.

There is another form, however, which can be more widely employed with benefit to the majority of patients with no harmful results to their objective will power, and with increasing aid to the physician in controlling the symptomata of disease and emasculating the subjective mind of the patient from its bodily environment of suffering. This form of hypnosis demands complete relaxation on the part of the operator as well as the subject, and by reason of the universal status of the patient and physician, above noted, can be the more generally used, and with more far-reaching results. In it there is no subtending of the will, no exhaustion on the part of the patient or operator. It is that form of hypnotic effort demanding no fixity or tension of will power, and depends only upon constant iteration and reiteration of suggestions, oral or mental, of the directing mind of the operator upon the subject. It yields most brilliant and oftentimes most astonishing results, and depends upon a fact in psychism denominated as telepathy. Telepathy * is defined as "the power of one mind to communicate intelligence to another otherwise than through the recognized channels of the senses." That this faculty is inherent in man is no longer a matter of supposition, for it is universally prevalent, and is of as much value in hypnotism as the law of suggestion and the subjective mind. It is through the medium of telepathy that the subjective mind and the subjective symptomata of the patient are recognized. Now, it is to be observed that symptomata of suffering on the part of every patient are known as subjective and objective. Ordinarily objective symptomata are easily noticed as disturbances in bodily pulse, temperature, coloring, secreta, excreta, growth or shrinkage, and means are adopted for their amelioration or effacement. But the subjective symptomata are but little commented upon, and while they may claim the paramount attention of the patient in the gamut of suffering, their verbal or oral announcement is too often ascribed to the nervousness or the imagination of the patient, and too often, therefore, disbelieved by the practitioner. Means adopted for the dissipation of the objective symptoms very often efface the majority of the subjective, but not invariably. If disease symptoms, subjective or objective, are dependent, as it would seem, on disturbances in the equilibrium of nerve action between the cerebro-spinal and sympathetic systems, then these oscillations in nervous energy would account for very many of the subjective symptomata complained of. It is at this point that the aid of the nervous force of the operator through emphatic and confident oral or mental suggestion can influence and direct the perverted nervous force of the sufferer and lead it back to the wonted channel of health by commanding the subjective mind to resume its proper control of body function. If the telepathic ability of the operator is complete through training, the vast majority of the subjective symptomata of the patient are easily enunciated by him to the patient, the expectant attention of the latter is closely held, his astonishment, delight, and sometimes fear are aroused, and the confidence of both subject and operator is gained. The amount of information culled by this method is often surprising, as to the ætiology of the patient's condition of ill health, its amount, and the tendency therein toward recovery or death. Of course, the various aids of an objective training are to be employed, such as physiognomical indications, vocal tones, ocular

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* Thomson Jay Hudson. *A Scientific Demonstration of a Future Life.*

expressions, and an objective examination of the patient is to be always insisted upon, in order to objectively verify the clews obtained in a subjective diagnostic or prognostic reading. Very often the disappearance of this or that symptom can be predicted even to its exact time. This prediction involves, of course, oral or mental suggestions, and at times no one is more astonished at the outcome than the operator himself. It is not always necessary to be within vocal or visual distance of the subject to successfully launch a therapeutic suggestion, nor is it requisite to know, or to have met the subject even. Personally, this observation has been proved in actual practice, a remarkable example of which will be presented. To summarize, it may be said that hypnosis takes cognizance of—

(*a*) The law of suggestion.

(*b*) The existence of a subjective and an objective mind.

(*c*) The fact of telepathy—all of which factors are universal; and last, though possibly not least, of

(*d*) A medium of communication.

What the latter is, what it consists of, has not yet nor will it be distinctly formulated until the laws of dynamics have been irrefutably settled and agreed upon; but the suggestion is offered that this medium of communication may be something analogous to, if it is not, interplanetary ether. If, as is supposed, that interplanetary ether offers the only reasonable medium for the transmission and transference of light, heat, electricity, or magnetism, from their primary sources in physicism, perhaps it may, indeed, be the manner and way and medium of the transference, broadly speaking, of psychism from point to point or along any distance of greater or lesser extent; for it would seem that this interplanetary ether pervades all things and entities and forces in this universe.

It is customary to adduce a series of cases in actual practice illustrative of the topic discussed. It is extremely odious to your reader, by reason of the personality involved in a subject of this nature, to follow the usual custom, since a proper personal modesty shrinks from such an exposure; but, while there is nothing in therapeutic results in the main extremely novel to one who habitually and scientifically studies the phenomena of psychism, yet it may be wise to cite one case in point, since it illustrates so remarkably the power of telepathic suggestion on the subjective mind of the mother of one of our local physicians who was ill unto death, and whose condition of illness, by reason of her age and disease, precluded all hope of recovery by ordinary therapeutic means. This case, indeed, bears corroboration in every essential detail, and through the professional desire of my *confrère* is allowed to be discussed. At the outset it must be said that conversational personalities must be indulged in for purposes of illustration.

On a Thursday evening this last summer, about 6.45 o'clock, my colleague called and announced that his mother was dying of gangrene of the right foot. Two weeks previously he had told me that there had developed in the joint of the large toe of the right foot an abscess resulting from shoe pressure on a bunion, and had sought advice therefor, and also said that she had suffered some years from diabetes mellitus. Here was a case presenting grave constitutional and local lesions. He stated that the local lesion had involved all of the toes, which had turned black and had withered, and that there was a most offensive, tough, and deep slough of the upper portion of the foot, extending to the ankle; that there was an intermittent pulse, atheromatous arterial condition, stupor, anorexia, nausea, no thirst, and a constant desire to die. Her age precluded an operation, as she was of too low a vitality to override such a procedure. "Could I go with him to see her on Saturday."—"Yes, but of what avail, since you think that death is imminent?"—"I don't know, but I want you to see her at all events."—"Does she suffer any pain?"—"No, that is just the trouble. She betrays no reaction, and, being so, I consider the case hopeless."—"If we could bring on a reaction of her nervous system," I tentatively suggested, "and arouse her with pain, without additional shock, perhaps something could be done."—"That is just the point, but I do not see how you can do it." This last remark of his gave me a clew to follow in hypnotism. "Where does your mother live—how far from here, and in what direction?" He pointed out the direction and told me sixteen miles, and her place of residence. "Are you willing that I try hypnotism on your mother, for I have an idea that it may do her some good?"—"Yes, but you will have to wait until we go Saturday, won't you?"—"No, there is one way we may reach the patient."—"What is that?"—"Telepathy," I answered. Thereat he laughed outright. This nettled me. "Fix your mind on your mother. Get her image mentally impressed as you last saw her this afternoon, and I will not only describe her appearance, face, and position in bed, but the room, and its location and surroundings." He laughingly did so, saying he was ready. In all, save one particular, the patient and locale were correctly described. This assured me that the way was opened for success. "Now, give me your hand. To get here to my office you traveled in such a circuit and such a direction. It will only be necessary for me to retrace your steps to get there in mind."—"Now what time is it?"—"Quarter past seven."

At once, with all the power I could summon, and retracing in my mind the path he had taken to come to my office from his mother, I launched upon the subjective mind of the patient the suggestion that she should at once suffer pain and continual pain in the right foot, and that her bodily functions should be restored. We took the time, and agreed that we would question the patient's husband as to the probability of pain occurring near 7.15 o'clock Thursday evening, and whether she suffered more pain from that time up to Saturday on our arrival than she had previously exhibited. The doctor left skeptical, but I persisted in saying that I believed that the experiment would be a success and that we would find that she would complain continually, while awake, of the pain. On our arrival the father told us she was worse. "Has she suffered much pain?"—"Oh, yes."—"When did the pain come on?"—"Somewhere between seven and eight o'clock Thursday evening, but nearer seven than eight." Getting bandages and material ready, the father, the doctor, and myself entered the room, and with no especial care and unnoticed by the patient. She lay in a stupor on her left side, her back toward us. The father stood at the foot of the bed, the doctor next at the side, and I near the head. I asked the two gentlemen to join hands, and the father to extend his right hand over his wife's foot. "Now, when I am ready, please notice what you both feel and observe the patient." I mentally, emphatically and confidently, commanded the patient to suffer pain, and that her subjective mind should resume control of her functions, that she should get well, and commanded aloud, "Now suffer pain, pain, reaction." The father felt a shock, the doctor nothing, the mother at once turned on her back with the cry, which I can never forget, dramatic in its intensity, "Oh, what are you doing that you make me suffer so much pain? I can't stand it! I want to die!" Her foot and limb twitched spasmodically with the agony she was suffering. "What have you to say now, doctor, to this form of hypnotism and its effect?"—"I don't know, it is beyond my understanding." The father wonderingly exclaimed: "It is mighty strange; it is wonderful." So far I was satisfied, but when I saw the foot unbandaged and recognized the gravity of the case, my objective training through my objective mind said: "No, she can not recover." My subjective mind said: "You must gather courage and not yield to the auto-suggestion of your objective mind, or she will die." While the foot was dressed I stood at the foot of the bed and mentally and orally commanded that the foot should freely discharge pus until we returned on Monday. As we were returning home the doctor asked: "Well, what do you think: is she going to get well?"—"My objective training and experience reply No, but if we find on Monday that the foot discharges pus I shall have more hope. My subjective mind assures me, however, that she will get well, against all reason." On Monday the father said: "The foot has discharged more pus between Saturday and to-day than during the previous two weeks, but she won't take any medicine. She says it is a sin to keep her alive when she wants to die and get rid of so much pain."

The difficulty in treating this case hypnotically lay in the fact that the patient, through her own auto-suggestion that she would die, strongly militated the suggestive command of the consultant that she must get well whether she wished it or not, and was an auto-suggestion that had to be continually fought by your reader throughout the entire conduct of the case. Her mind was affected through the double lesion and the toxæmia, and she has no recollection of the events and symptoms that marked her illness. For several long weeks thrice weekly visits were made, when gradual hypnotic control was gained over the patient, and the continual, emphatic, and confident suggestions were made that she should recover, and enjoy the rest of her life in comfort. I am assured by her son that she has greatly changed in appearance, that she enjoys life, and that the sugar has markedly lessened. The contour of the foot is restored, with the exception of the loss of all the toes except the big one.

This case illustrates the possibilities of hypnotism, wherein one had not the normal waking intelligence of the subject on which to more easily hypnotically operate, and no objective mind to help the operator; but it shows, indeed, the paramount importance of the subjective mind in hypnotic effort, evidences the existence of telepathy, and indicates, through the path originally taken to launch the initial suggestion, that there must be a physical medium of communication between mind and mind apart from the media of the special senses; for your reader had never seen the patient, the village, nor the road to the room in which she lay ill unto death.

It must be emphatically stated that the reader does not believe in marvels or modern supernaturalism, but, on the contrary, does assert that there is always a cause for a therapeutic result, and that there are laws established on a scientific basis capable not only of explaining therapeutic results in hypnotism, but also that there are facts which should establish medical hypnosis on such natural, physical, and mental grounds as to forever debar all ridicule, surmising, or odium from a field of medical research which promises such rich results in the future to therapeusis.

The complex man, being composed of mind and matter, can not be successfully treated either by drugs alone or suggestion alone; but in this age of sordid materialism there are entirely too great claims made for physicism, to the exclusion of psychism, which dominates, it must be concluded, the former.

THE TREATMENT OF VARICOSE VEINS.

By JOHN O'CONOR, M. A., M. D.,
SENIOR MEDICAL OFFICER, BRITISH HOSPITAL, BUENOS AIRES.

After ten years' operative experience I have come to the conclusion that nothing short of total extirpation of the diseased portion of vein merits the term radical.

In numerous instances I have performed the orthodox operation—*i. e.*, removal of many bits; and I regret to say that in a considerable percentage the cure has by no means been permanent.

On referring to one of our most recent standard works, *An American Text-book of Surgical Science*, I find the treatment of this very common complaint is dismissed in some six lines, and I will take the liberty of quoting the following paragraph: "The radical treatment has for its object the complete obliteration of the vein. Many surgical procedures have been devised for this purpose. Of these methods, multiple ligature, as advocated by Dr. Charles Phelps, who ties the vein in thirty or forty places, and excision of the vein in six, eight, or more places, are the best." It is needless to mention that neither of these operations can be really described as radical, for complete obliteration does not necessarily follow even forty ligations, or the removal of even a dozen pieces.

In the operation that I have practised for the past year, and am about to describe, no potential element exists, for the very simple reason that the offending portion of vessel is removed in its entirety.

The limb having been shaved, and disinfected from Poupart's ligament to the ankle, a two-inch incision is made over the saphenous opening, and the internal saphenous trunk is doubly ligated and divided; if no varicosity is present above the knee, the wound is closed, and dressed at once with iodoform gauze. If the femoral portion is affected, after ligation at the saphenous opening, the vein is dissected up, and its tributaries are seized with pressure forceps and ligated. In nearly all cases, if varices are present above the knee, there are also some below; consequently the incision is prolonged downward directly over the vessel until the lowest limit of the disease is reached; the vein is then tied and divided below. In some cases an eighteen- or twenty-inch incision is necessary.

If the disease does not extend above the knee, after occluding the saphenous trunk, as described above, an incision is made over the affected portion, a ligature is applied above and below, and the whole mass is removed by dissection. It is surprising how easily and rapidly the latter manœuvre may be carried out. Of course, all branches are caught up with pressure forceps, and when the main channel is removed they are ligated. As frequently the external saphenous vein is also affected, its varicose portion is dealt with in a similar manner.

To any one unaccustomed to a ten- or twenty-inch incision this plan may appear formidable, yet if the vessel is ligatured above and below the varicose area there is not the slightest danger of emboli or pyæmia, and as for hæmorrhage, it is so trivial that it does not deserve mention. In a recent severe case I removed twenty-six inches of the internal saphenous, and certainly the blood loss did not exceed two ounces. I have also employed this method in removing large thrombosed veins occurring in the first few months of pregnancy. In this class above all others it is particularly necessary, before manipulating the diseased portion, to occlude the main vein well above the seat of disease, so that if thrombi are dislodged they can not pass into the general circulation.

The time occupied in executing this method certainly does not exceed that in any of the nibbling processes. As to primary union, I find these long wounds heal just as kindly as the short ones do, and with ordinary surgical cleanliness there is nothing to be feared. The insertion of a strand of iodoform gauze as a drain to every four inches of wound is a useful precaution, for it does away with the risk of any blood collections. Personally I fear the presence of stagnant blood in wounds more than I do germs. Where the former is, doubtless the latter will gain access. "Bichos" deprived of their favorite medium are much more amenable to the natural forces of repair, but with blood aseptic healing is hopeless. It requires only another partner, a few buried silk sutures, to make up a trio that will play the tune of suppuration to the echo.

No bad results have so far followed this method, and all the patients appear grateful.

A CASE OF CROSSED HEMIPLEGIA.

MOST PROMINENT PHENOMENON, PARALYSIS OF THE PHARYNX. SYPHILITIC BASIS.

By HEINRICH STERN, M. D.

On the evening of February 10, 1896, I was summoned to attend E. F. W., who, according to the messenger, was seized with a suffocative attack.

Patient, a man, of German parentage, aged thirty-four years, five feet seven inches in height, rather spare in flesh, single; no occupation. He was at home and apparently in his usual condition, when occasion arose to blow his nose; he did so, and immediately thereafter felt a peculiar sensation in the nasopharynx, and in attempting to take a drink he found that he was not able to swallow except with much difficulty. A little while later, on trying to drink a glass of beer, he began to choke, and then I was called.

On inspection of his exterior it seemed to me as if the region of the larynx and the larynx itself were much tumefied and swollen. There was some drooping of the left angle of the mouth, with an immobile condition of that side of the face. The left upper eyelid drooped considerably—ptosis—but I was informed that such was always the case. There seemed to be some stiffness of the cervical muscles.

The right arm was very much weakened; patient seemed to have but very little strength therein. The right leg was markedly paretic. On examining the buccal cavity and parts beyond by reflected light, nothing abnormal was discovered; glottis and larynx presented a natural appearance.

Speech was unimpaired.

The paralysis of the pharynx was the most striking of the whole paretic phenomena, the dysphagia being complete.

Treatment.—Hypodermic injections of strychnine. Patient is nourished by means of the stomach tube.

February 12th.—The paretic condition on the part of the face has almost entirely disappeared, only a slight trace remaining at the left labial angle. The arm has also regained much of its former strength; the leg, though still weak, is also growing stronger, and patient would get out of bed and dress himself and sit up. He can not stand up yet very well; a tremor comes upon him when he makes the effort. The dysphagia is complete and persistent.

Dr. Illoway was called in consultation. This examination confirmed the results of the first; the patient could not swallow even a few drops of water placed into his mouth; it would get down into his larynx and cause choking.

Taking it for granted, from the mode of onset and the general appearance of the patient, that the whole trouble was based upon a syphilitic infection and specific disease of the cerebral centres, it was concluded to put the patient, in addition to the treatment already instituted, upon potassium iodide, 0.75 gramme four times daily, administered through the stomach tube, and after a few days more to resort to faradization.

19th.—The patient is improving rapidly. The other pareses have disappeared entirely and patient is able to go about. He left the house to-day to take a walk.

The dysphagia still persists. The patient is still fed with the tube.

25th.—The dysphagia is much improved and patient can swallow fairly well.

Although previously denied, the specific infection was subsequently admitted by the patient.

November 2, 1896.—The status of patient, as just described, has continued. He says that sometimes at meals, now, the bolus seems to stick in his œsophagus, and then his back is pounded by members of his family and he is all right again.

Some involvement, apparently, of the œsophagus. Occasionally, not always, a slight dragging of the right leg is noticeable.

The phenomena, as described, clearly show that we had here a case of crossed hemiplegia. This form of hemiplegia is already so well known and its lesions are so well described * that nothing more on that point need be said here.

The point of special interest, the unusual feature of the case, is the marked and most persistent (in comparison with that of other parts) paralysis of the pharynx. That this paralysis was complete was shown by the fact that a little water put into the patient's mouth could not be swallowed, but caused suffocation.†

That the case is syphilitic in character there can be no question now, as the infection is admitted by the patient; furthermore, the mode of onset,‡ the character of the attack, and the results of the specific treatment amply demonstrate it.

1338 Lexington Avenue.

The Journey to Moscow.—Dr. A. Jacobi, chairman of the American national committee, gives the following notice concerning reduction of fares to those who intend to participate in the Twelfth International Medical Congress, to be held in Moscow from the 19th to the 26th of August: On French, Spanish, Norwegian, and Oriental railroads, fifty per cent.; on Italian railroads, from thirty to fifty per cent., according to distances; on Hungarian railroads, a second-class ticket will be valid for a first-class seat, and a third-class ticket for a second-class seat. On the steamers of the Compagnie générale transatlantique, from New York to Havre, the "minimum summer rates" will be charged; on its Mediterranean line, fifty per cent., and on the West Indian thirty per cent., is deducted. The Messageries maritimes company allows thirty per cent.; the Italian Mediterranean line thirty per cent.; the Constantinople-Odessa line fifty per cent.; and the Austrian Lloyd twenty-five per cent.

A CASE ILLUSTRATING
THE USE OF THE CIRCULAR BANDAGE.

By T. M. BULL, M. D.,
NAUGATUCK, CONN.

I saw in the *Journal* of November 9, 1895, an article by Dr. George Henry Fox calling attention to a new system of bandaging by means of separate short, circular bands two or three inches wide, made of elastic webbing, and fitted to the limbs much after the manner of broad garters, one above the other, and slightly superimposed.

They were recommended on the ground of cleanliness, cheapness, convenience, and adaptability to the needs of the average patient.

The following case illustrates their use in a typical example of that common disease eczema et ulcus cruris.

Mrs. B. H., forty-six years old, comes with an eczema and varicose veins of left leg and thigh. Has also a dry pigmentation of right leg and a small ulcer of ankle. Right calf and thigh are also varicose. She wore a muslin bandage, which we removed, and after placing a piece of rubber sheeting over the ulcer applied a few garter bandages, which felt much lighter and cooler.

In one week she returned and reported that the ulcer was much smaller and the pain entirely gone. She can walk much better with the bands, and they are less bothersome than muslin bandages. The eczema also is very much better. Reapplied the garter bandages, seven to right and four to left leg.

The patient says that the ulcer was entirely healed in less than three weeks. The relief of the pain, itching, and general uneasiness in the limb was very great. Having tried muslin and elastic roller bandages, and elastic stockings as well, for over twenty years, she was certainly competent to judge of the merits of the different methods. She unhesitatingly says that the circular bandage is the best for the purpose, as when an ulcer was open and the bandage soiled by the discharge only a section need be washed at a time, and it was not spoiled by the giving way of a few strands or stretching, as it only required a few minutes' work with a needle to put it into proper condition again. It felt better and was more convenient to apply than any other bandage, and, while she deprecated the necessity of wearing any, she thinks it is certainly the best bandage for any one requiring support for the veins of the leg.

Therapeutical Notes.

Periploca Græca as a Cardiac Stimulant.—Bourginsky (*Vratch*, 1896, No. 28; *Journal de médecine de Paris*, March 21, 1897) finds that this asclepiadeous plant, indigenous to Greece, western Asia, and southern Europe, and naturalized in the western part of the State of New York, known by the common names of climbing dog's-bane, milk-vine, silk-vine, Syrian silk-plant, and Virginian silk, contains a glucoside, periplocin, which he is inclined to look upon as an isomer or polymer of Schmiedeberg's digitalin. From experiments on frogs he concludes that the plant contains a cardiac poison which acts like the other cardiacs on the function of the heart. In large doses it stimulates also the respiratory and vomiting centres. Its antagonist is atropine. The fluid extract may be given in doses of from five to ten drops, and periplocin in doses of 0.031 of a grain.

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* Ross. *Diseases of the Nervous System.* Von Ziemssen's *Encyclopædia.* Osler. *Practice of Medicine.*

† Ross. *Op. cit.*

‡ Ross. *Op. cit.* Bumstead and Taylor. *Venereal Diseases.*

The Creosote Treatment with Children.—Hock (*Wiener medicinische Blätter*, 1896, No. 49; *Centralblatt für innere Medicin*, March 27, 1897) uses creosote not only in tuberculosis, but also for persistent catarrhal phenomena after measles and whooping-cough, according to the following prescription:

℞	Creosote	15 grains;
	Cod-liver oil	3 ounces;
	Saccharin....................	$\frac{3}{4}$ of a grain.

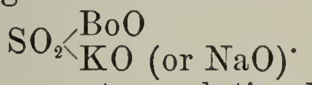
M. From two teaspoonfuls to three tablespoonfuls to be taken daily.

Iodine as a Depilatory.—Storbeck (*Pharmaceutische Zeitung*, 1897, No. 19; *Nouveaux remèdes*, April 8, 1897) is credited with the following formula:

℞	Alcohol.........................	48 parts;
	Collodion	140 "
	Iodine.........................	3 "
	Oil of turpentine................	6 "
	Castor oil......................	8 "

M. To be applied thick and kept on for three or four days. When it is removed, the hairs come with it.

Borol.—According to Jaeger (*Gazette hebdomadaire de médecine et de chirurgie*, April 11, 1897), this antiseptic is three times as energetic as carbolic acid. It occurs in irregular, glasslike fragments soluble in five volumes of water and having the formula



$$SO_2 \langle \begin{array}{l} BoO \\ KO \text{ (or NaO)} \end{array} .$$

A tolerably strong watery solution has a subacid and somewhat astringent taste. In solutions of from two to ten per cent., it soon kills the micro-organisms of malignant pustule and cholera, also the *Staphylococcus pyogenes aureus*. It is said to be non-poisonous and readily taken by patients, but the results of its internal administration in such diseases as acute septicæmia, erysipelas, and epidemic cerebro-spinal meningitis have not yet been striking. Of a twenty-per-cent. solution, from ten to twenty drops may be given to a child, from thirty to fifty to an adult, every four hours, in some diluent not containing milk, which it coagulates. For surgical purposes, a five-per-cent. solution in sterilized water may be used, and as an application to mucous surfaces, a one- or two-per-cent. solution.

Benzoinated Mercury in the Treatment of Buboes.—Dr. Schischa, of Gratz (*Wiener medizinische Wochenschrift*, 1897, No. 3; *Deutsche Medizinal-Zeitung*, April 12, 1897), who has employed this preparation in twenty-seven cases, makes a small incision into the fluctuating bubo, and injects a one-per-cent. solution of benzoinated mercury. An anæsthetic is not required, or any assistant, and the period required for a cure is comparatively short.

The Treatment of Lupus with Plasters of Salicylic Acid and Creosote.—Dubreuilh and Bernard (*Gazette hebdomadaire de médecine et de chirurgie*, 1896, No. 10; *Centralblatt für chirurgie*, March 27, 1897) have had excellent results with this method of treating lupus, which was introduced by Unna. They make use of it in cases in which surgical procedures are declined, and consider it superior to the application of corrosive sublimate, caustic potash, or arsenical paste. It is effective in cases in which the nodules are comparatively superficial, less so in those in which they are deep-seated and in the sclerotic form. For such cases they recommend erasion, galvano-cauterization, or scarification.

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A NEW POINT IN THE ANATOMY OF THE MOUTH.

Dr. B. von Dzierzawski, of the Warsaw Dental School, contributes to the *Archiv für pathologische Anatomie und Physiologie und für klinische Medicin*, vol. cxlvii, No. 3, an interesting article on the lateral frenula of the lips. He first remarks that in such anatomical text-books as those of Sappey, Cruveilhier, Henle, Gegenbaur, and Luschka only the median frenula are mentioned, one for each lip, although some authors, like Cruveilhier, add that the frenulum of the upper lip is more pronounced than that of the lower lip, while others, such as Zuckerkandl, are silent concerning the median frenulum of the lower lip. In fifteen out of sixty-seven persons examined by the author, no frenulum labii inferioris was found, although the gingivo-labial sulcus was a little shallower in the median line than elsewhere.

If, he says, we seize the lips in the vicinity of the angle of the mouth and draw them outward and a little backward, we may readily perceive that in many persons there exist at the points grasped folds of mucous membrane stretching from the lips to the gum. These folds, which, so far as he knows, have not before been described, he calls the frenula labiorum lateralia. The commonest type of these frenula of the upper lip, found in thirty-nine of the sixty-seven persons examined, is that of a rather firm fold standing out to a distance of from three to five millimetres and meeting the gum a little in front of the middle of the first molar tooth. In a minority of persons there are other forms of lateral frenula of the upper lip, including one with accessory folds. In all but five of sixty-three persons examined, thirteen children and fifty adults, lateral frenula of the lower lip of one kind or another were found. He enumerates four types. The frenulum laterale labii inferioris generally has its gingival extremity situated a little farther forward than that of the upper lip.

The author declares that these lateral frenula are as constant as the frenulum mediale labii inferioris and as typical, and he argues therefore that they should be recognized as regular anatomical structures. In many instances they contain nothing but a bundle of connective tissue, but those of the upper lip often inclose the lower fasciculus of insertion of the levator anguli oris proprius.

Topographically, he would regard them as marking the boundary between the vestibulum oris proprium and the cavum buccale.

These lateral frenula of the lips, says the author, are of some importance in practice. He gives two instances of a small ulcer so situated upon them that the free escape of the discharge seemed to be prevented by them. In each case discission of the frenulum with a pair of scissors had to be resorted to before the ulcer would heal.

GLANDULAR FEVER.

DR. ALBERT E. ROUSSEL recently presented before the Philadelphia County Medical Society an interesting paper on this subject in which he reported four cases of his own, all occurring in the same household and one of them in the person of an adult. The paper is published in the *Medical and Surgical Reporter* for April 17th. It opens with a brief summary of Pfeiffer's original account published in the *Jahrbuch für Kinderheilkunde* in 1889. Pfeiffer's cases, he says, occurred in children from five to eight years of age, who were suddenly taken ill with a temperature of from 103° to 104° F., loss of appetite, occasional vomiting and constipation, difficulty and pain in swallowing, and pain on moving the head. The glands behind the sterno-cleido-mastoid muscle and those at the back of the neck were enlarged and painful. The fever lasted from two to eight days, but the enlargement of the glands persisted for some time longer. The throat was congested and the liver and spleen were enlarged. The axillary and inguinal glands were not involved.

Dr. Roussel refers to Pfeiffer's mention of a less acute form of the disease, but thinks its connection with the acute form questionable. He then gives the main points of publications on the subject by Stark, Protassow, Massons, Neumann, Gourichon, Muggia, Desplats, and J. Park West. Dr. West's paper, it will be remembered, was read before the Section in Pædiatrics of the New York Academy of Medicine and published in the *Archives of Pædiatrics* for December, 1896. It was remarkable for the number of cases, ninety-six, reported as having occurred in an epidemic in eastern Ohio.

The case of Dr. Roussel's that occurred in an adult was that of the nurse who had taken care of the three children. The fact that all four of the cases occurred in one household inclines him to look upon the disease as infectious or contagious, a point concerning which authors are at variance. The diagnosis, he thinks, offers considerable difficulty. In his cases he was at first strongly inclined to suspect scarlet fever or Rötheln. Glandular fever, he remarks, seems to have a special predilection for male subjects. The prognosis is generally favorable, and complications seem to be rare.

The treatment, according to Dr. Roussel, is necessarily symptomatic. The use of small doses of calomel at the outset has, according to different observers, been of particular benefit. In addition, he himself has employed small doses of salophene, which seemed to relieve the pain and the general malaise. He thinks the administration of iron is certainly necessary during convalescence. Locally, he has employed belladonna ointment in conjunction with lanolin.

MINOR PARAGRAPHS.

A CASE OF BENZENE POISONING.

WITTHAUER (*Münchener medicinische Wochenschrift*, 1896, No. 39; *Centralblatt für innere Medicin*, March 27, 1897) reports the case of a child, twenty-one months old, which had drank an indefinite amount from a bottle of benzene. In from half to three quarters of an hour the child was perfectly unconscious, the pupils were dilated to the maximum, the skin was cold and cyanotic, the breathing was shallow and rapid, and the pulse was barely perceptible. The stomach was washed out and milk was thrown into it, injections of ether were given, and a lukewarm bath was administered, with cold affusions. The urine, passed spontaneously, was free from albumin and sugar; the temperature was 101.6° F. After a very restless night the temperature was 99.5° F., but by evening it had risen to 102.5° F. On the following day the child was conscious, but in the middle of the day the temperature, without known cause, was 104.3° F. A quiet night followed. On the next day the morning temperature was 99.8° F., and the evening 100.7° F. Rapid recovery then followed. The fever was attributed to acute gastritis from a slight caustic effect on the mucous membrane of the stomach.

THE MICROBE OF MUMPS.

AT a recent meeting of the Berlin Society of Internal Medicine (*Therapeutische Wochenschrift*, April 11, 1897) Dr. Michaelis showed some preparations of the bacteria of mumps obtained by catheterism of Stenson's duct. Quite characteristic bacteria were to be seen in the secretion, and in two cases they had been obtained by cultivation from the contents of a parotiditic abscess. In some other instances they had been found in the blood of persons sick with mumps. They were diplococci closely resembling gonococci and meningococci, but much smaller. Attempts to inoculate animals with them had failed.

THE PELVIS OF THE SOUDAN WOMAN.

IN a Halle inaugural dissertation, Dr. P. Römer (*Centralblatt für Gynäkologie*, March 13, 1897) describes five Soudan women's pelves of the Halle collection. In the essential points, his description agrees with those of others. The pelves are of light and graceful build, with a decided flaring of the ilia. Contrary to Vrolik, the author found no striking reduction of the transverse and increase of the antero-posterior diameter. In one instance the superior strait was moderately, and in another exquisitely, transverse-ovate, in one case it was more round than oval, and twice it was quite round; so there can not be said to be any typical form of the pelvic entrance. The sacrum was small and slender, made up of five vertebræ in three instances, and of six in two. There were great differences in its curvature. The Soudanese are distinguished from related Polynesians by their shallow pelves, while the skulls of all are brachycephalic. The Malay pelvis is smaller than the European, shallower and of slenderer build.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 27, 1897 :

DISEASES.	Week ending April 20.		Week ending April 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	2	2	3
Scarlet fever	209	6	176	10
Cerebro-spinal meningitis	5	3	6	6
Measles	215	5	216	3
Diphtheria	220	33	299	31
Croup	8	7	11	4
Tuberculosis	146	125	198	112

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general :

Small-pox—United States.

Chicago, Ill	April 10–17	2 cases.	
Blissfield, t'p, Mich	April 17	Small-pox reported.	
New York, N. Y	April 17–24		3 deaths.
Pensacola, Fla	April 10–17	5 cases of varioloid.	

Small-pox—Foreign.

Calcutta, India	March 6–13		7 deaths.
Genoa, Italy	April 3–10	2 cases.	
Hong Kong, China	March 6–22		33 "
Madras, India	March 13–19		1 death.
Madrid, Spain	April 1–7		4 deaths.
Moscow, Russia	March 27–April 3	2 "	
Nagasaki, Japan	March 20–27	26 "	11 "
Odessa, Russia	March 27–April 3	26 "	5 "
Osaka and Hiogo, Japan	March 20–27	14 "	4 "
Prague, Germany	March 27–April 3	23 "	
St. Petersburg, Russia	March 27–April 3	14 "	4 "
Trieste, Austria	March 27–April 3	6 "	
Warsaw, Russia	March 27–April 3		5 "
Yokohama, Japan	March 24–31	43 "	23 "

Cholera.

Calcutta, India	March 6–13		166 deaths.
Madras, India	March 13–19		1 death.

Yellow Fever.

Panama	April 14	20 cases,	17 deaths.

Plague.

Bombay, India	March 9–23		1,861 deaths.

American Aid offered to the Greek Army Medical Service.—The Greek consul general in New York has sent the following dispatch to Prime Minister Delyanni:

"Dr. Nicolaus Senn, one of the most prominent surgeons in America, his son, also a surgeon, Dr. Rose, physician and philhellene, and a distinguished American lady as nurse, offer their services to Greece to go to the battlefield to attend the wounded. They ask only for appointment, and will pay their own expenses. Answer is prepaid."

A Consulting Therapeutist.—Messrs. Parke, Davis, & Co., of Detroit, announce that they have retained the services of Dr. Hobart A. Hare, of the Jefferson Medical College, Philadelphia, as consulting therapeutist for their house.

Changes of Address.—Dr. Charles N. Cox, to No. 257 Jefferson Avenue, Brooklyn; Dr. Charles E. Hirsh, to No. 103 West Eighty-fourth Street, New York; Dr. Charles Wuest, to No. 1024 Bushwick Avenue, Brooklyn.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 18 to April 24, 1897:*

HOFF, JOHN VAN R., Major and Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month.

KEEFER, FRANK R., Captain and Assistant Surgeon, is granted leave of absence for four months and fifteen days, to take effect on or about May 27th, with permission to go beyond sea.

RAFFERTY, OGDEN, Captain and Assistant Surgeon, is granted leave of absence for three months, with permission to apply for an extension of one month, to take effect upon his relief from duty at Fort Bliss, Texas.

Society Meetings for the Coming Week:

MONDAY, *May 3d:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Philadelphia Academy of Surgery; Boston Society for Medical Observation; Boston Society for Medical Improvement; Boston Medical Association (annual): St. Albans, Vermont, Medical Association; Providence, Rhode Island, Medical Association; Hartford, Connecticut, Medical Society; South Pittsburgh, Pennsylvania, Medical Society; Chicago Medical Society.

TUESDAY, *May 4th:* Louisiana State Medical Society (first day—New Orleans); New York Neurological Society; New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Cattaraugus (annual—Salamanca), Columbia (annual—Hudson), and Orange (annual), N. Y.; Hudson (Jersey City—annual) and Mercer (annual), N. J., County Medical Societies; College of Physicians of Philadelphia (Section in Otology and Laryngology; Androscoggin, Maine, County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *May 5th:* Wisconsin State Medical Society (first day—Racine); Kentucky State Medical Society (first day—Owensboro); Louisiana State Medical Society (second day); New York Academy of Medicine (Section in Public Health); Harlem Medical Association of the City of New York; Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton, N. Y.); College of Physicians of Philadelphia; Penobscot, Maine, County Medical Society (Bangor); Essex, Massachusetts, North District Medical Society (annual—Haverhill); Plymouth, Massachusetts, District Medical Society (annual); Bridgeport, Connecticut, Medical Association.

THURSDAY, *May 6th:* Wisconsin State Medical Society (second day); Kentucky State Medical Society (second day); Louisiana State Medical Society (third day); New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans (semi-annual—Albion), N. Y.; Ocean, N. J., County Medical Society (Tom's River); Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *May 7th:* Wisconsin State Medical Society (third day); Kentucky State Medical Society (third day);

Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

Saturday, *May 8th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Married.

Alford—Kirkland.—In Forest, Mississippi, on Wednesday, April 7th, Dr. J. Mosely Alford and Miss Jessie Kirkland.

Hirsh—Mayer.—In New Rochelle, N. Y., on Sunday, April 25th, Dr. Charles E. Hirsh, of New York, and Miss Sara A. Mayer.

Gayle—Decuir.—In New Iberia, Louisiana, on Wednesday, April 21st, Dr. Thomas R. Gayle and Miss Lelia Decuir.

Grant—Talbott.—In Plaquemine, Louisiana, on Wednesday, April 21st, Dr. Robert Grant and Miss Lilly Talbott.

Pothier—Lemaire—In New Orleans, on Wednesday, April 21st, Dr. Oliver L. Pothier and Miss Marie Lemaire.

Steele—Durham.—In Laredo, Texas, on Tuesday, April 27th, Dr. Charles H. Steele and Miss Willie Durham.

Tousey—von Gerding.—In Atlanta, Georgia, on Thursday, April 22d, Dr. Sinclair Tousey, of New York, and Miss Julia von Gerding.

Trulock—Orto.—In Pine Bluff, Arkansas, on Wednesday, April 21st, Mr. Walter N. Trulock and Miss Eliza Orto, daughter of Dr. Zaphney Orto.

Twinck—Halsey.—In Newark, N. J., on Monday, April 19th, Dr. Sidney A. Twinck and Miss Virginia W. Halsey.

Died.

Brooks.—In Pawtucket, Rhode Island, on Tuesday, April 20th, Dr. James F. Brooks, in the thirty-ninth year of his age.

McLean.—In Troy, N. Y., on Friday, April 23d, Dr. Le Roy McLean, in the sixty-seventh year of his age.

Smith.—In New York, on Tuesday, April 27th, Josephine M., daughter of the late Dr. Joseph Mather Smith.

Letters to the Editor.

THE ANTIVIVISECTIONISTS—INSANE.

119 East 128th Street, New York, *April 25, 1897.*

To the Editor of the New York Medical Journal:

Sir: Not in a playful spirit of exaggeration or extravagant expression, but in perfect earnestness and sincerity, I make the declaration that the antivivisectionists are *insane*. I of course do not mean to assert that they are insane in the ordinary duties and acts of their daily life, but on the subject of vivisection they are unquestionably possessed of an *idée fixe* which obscures their mental vision, and in a peculiar form of delirium they see everything connected with animal experimentation in an exaggerated, false, and distorted light.

In order to enlighten the laity—the only people who are in need of being enlightened—on the subject of vivisection, on its absolute necessity, the immense benefits mankind and science have derived from it, etc., and to refute the falsehoods circulated by the antivivisectionists, I engaged in a discussion with the latter in one of our lay journals (*The Twentieth Century*), and after having heard all their arguments, after having studied their literature, their official organs and popular leaflets, that conclusion—of their being insane—has forced itself upon me irresistibly. This conclusion or hypothesis, besides being the most probable one, is also, by relieving them of moral responsibility for their acts and words, the most charitable one. I am loath to believe that there exist people so depraved and so utterly devoid of all moral rectitude as to be capable of printing such falsehoods and spreading such calumnies as the antivivisectionists are doing right along.

A few extracts will show whether I have valid reasons for my assertion or not. The following pearls are picked from a leaflet entitled *Darkest Science*, which is sent broadcast through the mails: "The published records of the great majority of vivisectors indicate simply a wanton lust of cruelty—either inborn or acquired." "A careful examination into the mental condition of many of the students who frequent vivisectional laboratories would reveal the fact that they were deficient in normal brain development. This deficiency may be due to some prenatal condition, or it might be caused by the absinthe or liquor habit; but I believe that it is more often due to *a perverted sexual nature.*" "These perverts do not seek the society of the opposite sex, but find their gratification in such sanguinary employment as shedding blood and torturing animals to death." After quoting from Krafft-Ebing's *Psychopathia sexualis* and giving Jack the Ripper as an example of a sexual pervert, the writer continues: "That the vivisectional ranks abound with them naturally follows. They find their way into the experimental laboratory through the law of attraction—being attracted by that which gratifies their appetite for cruelty." The finale of this beautiful composition is as follows: "So it is evident that the antivivisectionists, in their efforts to expose the evils of scientific research, also strike at the root of evils more corrupt, and which few of them are aware of. They thus attack sensuality (Satan's most vital point), theft, falsehood, and the other most degrading forms of immorality."

Well, what would you call people who openly accuse the great savants of science—Koch, Virchow, Du Bois-Reymond, Huxley, Horsley, Claude Bernard, Pasteur, and the thousand other immortal men—of a wanton lust of cruelty and of sexual perversion?

The following passage from the pen of one of my opponents, an estimable old lady, is certainly unique in its grotesqueness: "I have a notion that the cruel vivisectors are descendants from Huns, Spanish Inquisitors, Scotch Presbyterians, etc. Surely all traits and tendencies from such much-to-be-deplored ancestors should be conquered, uprooted, put out of the world of to-day." And another one of my opponents, the corresponding secretary of the American Antivivisectionist Society, a person who, from the official position she holds, one would certainly expect to employ moderate and well-considered language, writes as follows:

"That the immense increase in vivisectional experimentation, and the opportunities it has afforded to medical students to both witness it and practise it, thus accustoming them to cruelty and hardening them to the sight of blood and suffering, has had a deteriorating influence upon many of them, there can be, I think, no doubt. Our criminal annals for the last ten or fifteen years, since vivisection has so greatly increased, are filled with accounts of murders committed by medical students and physicians.

"In fact, nearly all of our murder cases where death was the result of a deliberate intention to kill, such as by poisoning, and not the effect of homicide or manslaughter, consequently of a much worse character, have been committed by those who had been trained in the school of vivisection. It was not so twenty or thirty years ago." And so on, *ad nauseam*.

I ask again, What can be thought of the mental condition of a person or persons penning and allowing to appear in print similar imbecilities?

I, for my part, am firmly convinced that they should be put under the care of a competent alienist.

William J. Robinson, Ph. G., M. D.

THE BOARD OF HEALTH AND THE PROPOSED CITY CHARTER.

Health Department, New York, *April 14, 1897*.

To the Editor of the New York Medical Journal:

Sir: Among the criticisms of the new charter, none has been more severe than that directed against Sections 1247–1249, relating to the duties of physicians in reporting cases of contagious and infectious disease. These sections are referred to as if they were entirely new and unprecedented and designed to give the health department a dangerous and tyrannical authority over the members of the medical profession. Now, the fact is that these sections are not new. They constitute Sections 608–610 of the Consolidation Act of 1882, under which the city has been governed for fifteen years, and were originally passed forty-seven years ago, Sections 1247 and 1249 being in Chapter 275, Laws of 1850, and Section 1248 in Chapter 384, Laws of 1851.

George B. Fowler, M. D.,
Commissioner.

Book Notices.

Telepathy and the Subliminal Self. An Account of Recent Investigations regarding Hypnotism, Automatism, Dreams, Phantasms, and Related Phenomena. By R. Osgood Mason, A. M., M. D., Fellow of the New York Academy of Medicine. New York: Henry Holt and Company, 1897. Pp. viii–343.

Dr. Mason considers separately telepathy, or thought transfer, hypnotism, clairvoyance, double or multiple personality, somnambulism, automatism, planchette, automatic writing, painting, etc., crystal-gazing, and phantasms.

Under telepathy, he cites the finding or describing of unseen objects, etc., by mind-reading or muscle-reading, and gives instances of strong impressions which have been made upon various persons that they were summoned by distant friends, who were found to be in extremity when the summons was answered by immediate visits to the persons from whom they were supposed to proceed.

The personality of the operator and his magnetic influence in producing hypnotic effects are given greater prominence by the author than is generally accorded to them by most observers, who believe that the susceptibility of the subject in many cases to what might be called mechanical hypnotism, as when it is produced by looking at a bright object, or to auto-hypnotism, shows the insignificance of the personality of the operator, except as the subject accepts his statements as true and yields obedience to his commands. Hypnotism exercised at a distance is probably less generally accepted now than in the days when the effect was believed to be an emanation from the unusually gifted possessor of animal magnetism.

Other chapters of the book state clearly the author's acceptance of a theory of a conveyance of impressions and influences from one person to another at considerable distances by some medium, not pretended to be supernatural or spiritual, but beyond the perception of our ordinary senses—a theory of a "subliminal self"—an emanation from one individual which reaches out to another person and conveys ideas, summons assistance, or influences action by other than the usual means. This is exceedingly interesting and, if a reality, of immense importance; but it is, as yet, beyond the belief of most thinkers—perhaps, as the author suggests, because they have not investigated deeply enough the array of facts, some of which he presents as examples in a most readable and interesting manner.

Whatever the preconceptions of the student of the phenomena of mind in its protean manifestations, a perusal of this work will give him in concise form the grounds for the belief of many highly intelligent persons that we may not know, by any means, the metes and bounds of normal and abnormal mental potentialities.

Formulaire des médicaments nouveaux pour 1897. Par H. Bocquillon-Limousin, pharmacien de 1re classe, lauréat, médaille d'or, de l'Ecole de pharmacie, etc. Avec une introduction par Henri Huchard, membre de l'Académie de médecine, médecin de l'hôpital Necker. Paris: J. B. Baillière et fils, 1897. Pp. 308.

Nearly two hundred articles have been added in this volume to those that remained from its predecessor after the application of the pruning process; yet, it contains not quite so many pages as the volume for 1896. This shows that the revision has been very thorough. M. Bocquillon-Limousin's book is, in our opinion, one of the best of its class. The only fault that we have detected in a cursory examination of this edition is that *Anhelonium Lewinii* is treated of under the name of Auhalonium. This is not a printer's error, for it is given a number of times, and the article occurs in the place proper for it in an alphabetical arrangement if it were spelled with *au* instead of *an*.

BOOKS, ETC., RECEIVED.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Volume IX. Diseases of the Digestive Organs. New York: William Wood and Company, 1897. Pp. 3 to 820.

International Clinics. A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by Judson Daland, M. D., Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, etc.; J. Mitchell Bruce, M. D., F. R. C. P., London, Physician to and Lecturer on the Principles and Practice of Medicine in the Charing Cross Hospital; and David W. Finlay, M. D., F. R. C. P., Aberdeen, Scotland, Professor of Practice of Medicine in the University of Aberdeen, etc. Volume

I. Seventh Series, 1897. Philadelphia: J. B. Lippincott Company, 1897. Pp. xii–1 to 361.

Atlas and Essentials of Gynæcology. By Dr. Oscar Schaeffer, Privatdocent in Obstetrics and Gynæcology at the University of Heidelberg. With One Hundred and Seventy-three Colored Plate Illustrations and Fifty-four Woodcuts. New York: William Wood and Company, 1897. Pp. xviii–1 to 288. [Price, $3.50.]

Lectures on the Treatment of Fibroid Tumors of the Uterus, Medical, Electrical, and Surgical. By Franklin H. Martin, M. D., Professor of Gynæcology in the Postgraduate Medical School of Chicago, etc. Chicago: The W. T. Keener Co., 1897. Pp. 5 to 174.

Transactions of the Canadian Medical Association. Twenty-ninth Annual Meeting, Montreal, August 26, 27, and 28, 1896.

The Thirty-eighth Annual Report of the Buffalo General Hospital. For the Year 1896. A Contribution to Traumatic Abdominal Surgery. By Thomas H. Manley, M. D. [Reprinted from the *Annals of Surgery.*]

On the Treatment of Fractured Shafts of Bone in Children; Simple, Complicated, and Compound. By Thomas H. Manley, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Auto-intoxication. By Samuel Wolffe, M. D., of Philadelphia. [Reprinted from the *University Medical Magazine.*]

Miscellany.

The American Dermatological Association. — The twenty-first annual meeting will be held in Washington on May 4th, 5th, and 6th, under the presidency of Dr. James C. White. The programme includes the following titles: The president's address, by Dr. James C. White; A Contribution to the Study of Bleeding Stigmata, by Dr. J. N. Hyde; On the Various Forms of Pityriasis and their Relation to Erythema, Eczema, and Psoriasis, by Dr. G. H. Fox; Some Further Observations upon Electrolysis in Diseases of the Skin, by Dr. W. A. Hardaway; Strong Solutions of the Ichthyol Group in Acute and Chronic Inflammatory Conditions of the Skin, by Dr. H. G. Klotz; A Report of Four Cases of Hysterical Dermatoneurosis, by Dr. A. Van Harlingen; Remarks on the Xanthomata, by Dr. S. Pollitzer; A Scale of Measurements for the Accurate and Uniform Description of Cutaneous Lesions, of Universal Adaptability, by Dr. C. W. Allen; A Case of Hereditary and Continuous Shedding of the Finger Nails, by Dr. D. W. Montgomery; Syphilis and Colles's Law, with a Report of a Case, by Dr. W. T. Corlett; Symmetrical Atrophy of the Skin; a Report of a Case, with Colored Drawings and Microscopical Examination, by Dr. J. A. Fordyce; A Series of Eleven Cases in one Family of Porokeratosis (Mibelli) or Hyperkeratosis Eccentrica (Respighi), with Histological Specimens, by Dr. T. C. Gilchrist; Some Cases of Feigned Eruptions, by Dr. F. J. Shepherd; a general discussion on the Conditions which Influence the Course of Syphilis: (*a*) The Virus, (*b*) The Individual (its Adult Aspects, by Dr. R. W. Taylor; its Infantile Aspects, by Dr. J. N. Hyde); Contributions to the Ætiology of Congenital Ichthyosis, by Dr. J. M. Winfield; A Peculiar Affection of the Hair Follicle, by Dr. J. Grindon; A Case of Impetigo Herpetiformis, by Dr. M. B. Hartzell; Impetigo Herpetiformis or Dermatitis Herpetiformis? A Report of a Case, with Colored Drawings and Microscopical Examination of the Tissue and Blood, by Dr. J. A. Fordyce; Clinical Notes, by Dr. W. A. Hardaway; A Case of Pseudo-tuberculosis of the Face, with Some Experimental Observations, by Dr. T. C. Gilchrist and Dr. W. Royal Stokes; The Ætiology of Psoriasis—a Retrospect, by Dr. W. T. Corlett; Lymphangeioma of the Labia Majora, by Dr. J. C. White.

The American Neurological Association.—The twenty-third annual meeting will be held in Washington on May 4th, 5th, and 6th, under the presidency of Dr. M. Allen Starr, of New York. The programme includes the following papers: Arachnoid Œdema, Productive of Pressure Symptoms after Head Injuries, by Dr. G. L. Walton, of Boston; Little's Disease: Shall we Retain the Name? by Dr. B. Sachs, of New York; Auditory Aphasia, by Dr. Howell T. Pershing, of Denver; The Pathological Anatomy of Huntington's Chorea, by Dr. Joseph Collins and Dr. B. Onuf, of New York; Microcephalus, by Dr. Frederick Peterson, of New York; Anæsthesia in Spinal Diseases, by Dr. Philip Coombs Knapp, of Boston; The Nature and Treatment of Torticollis, by Dr. G. L. Walton, of Boston; A Case of Syringomyelia—A Case of Acute Softening of the Pons, by Dr. Theodore Diller, of Pittsburgh; A Case of Subacute Bulbar Paralysis, with an Exhibition of Sections, and A Case of Syringomyelia, by Dr. Hugh T. Patrick, of Chicago; Primary Idiopathic Hydrocephalus in Adults (the Meningitis Serosa Ventriculorum of Quincke); with a Report of Four Cases, Three with Autopsies, by Dr. Morton Prince, of Boston; A Case of Jacksonian Epilepsy, Operation, Complete Cessation of Attacks, by Dr. Græme M. Hammond, of New York; A Case of Purulent Primary Leptomeningitis, and A Case of Paralysis Agitans at Thirty-four Years of Age, Immediately Following Typhoid Fever, by Dr. Frank R. Fry, of St. Louis; A Report of Two Cases of Tumor of the Brain, by Dr. J. Arthur Booth, of New York; Some Interesting Cases of Brain Tumors, by Dr. Philip Zenner, of Cincinnati; A Report of a Case of Sarcoma of the Mid-brain in a Child, Associated with Asymmetrical Hydrocephalus, by Dr. C. A. Herter, of New York; A Report of a Case of Subcortical Cerebellar Tumor Successfully Removed, by Dr. Joseph Collins and Dr. G. E. Brewer, of New York; Epilepsy Following Infantile Cerebral Palsy, Improvement Following Craniectomy and Evacuation of a Subcortical Cyst, by Dr. William M. Leszynsky, of New York; Steps Toward Insanity, by Dr. Smith Baker, of New York; Traumatic Focal (Capillary?) Lesion of the Cervicodorsal Cord, and Poliomyelitis Anterior Subacuta Unilateralis in a Man of Forty-four, Recovery, by Dr. F. W. Langdon, of Cincinnati; Contributions to the Study of Vertigo, by Dr. Frank K. Hallock, of Cromwell; A Report of a Case of Tumor of the Frontal Lobe of the Brain and Exhibition of a Brain Receptacle, by Dr. William C. Krauss, of Buffalo; A Study of a Case of Encephalitis, with Changes in the Pia, by Dr. Alfred Wiener, of New York; Two Cases of Basedow's Disease, with Autopsies, by Dr. Charles L. Dana, of New York; Two Cases of Acute Ascending Paralysis, with Autopsy, by Dr. John Jenks Taylor, of Boston; A Case of Tactile Amnesia, by Dr. Charles W. Burr, of Philadelphia; the report of the committee on neuronymy, by Dr. Burt G. Wilder, of Ithaca; and the report of the committee on the after-care of the insane, by Dr. Henry R. Stedman, of Boston.

The American Ophthalmological Society.—The thirty-third annual meeting will be held in Washington on

May 5th and 6th, under the presidency of Dr. George C. Harlan. The following titles are included in the programme: What Standards of Form and Color should be Required in Railway Service? by Dr. C. H. Williams; A Report on a New Operation for Prothesis in Cases of Cicatricial Orbit, by Dr. G. C. Harlan; A Case of Ivory Exostosis of the Orbit, by Dr. W. F. Norris; A Supplementary Report of a Case of Ivory Exostosis of the Orbit, by Dr. R. Sattler; Enucleation of Both Eyes Owing to Panophthalmitis in a Case of Exophthalmic Goître, by Dr. J. A. Spalding; Double Exophthalmos, with Destruction of the Eyes, in an Infant, Starting Probably from the Dura near the Sella Turcia: Specimen, by Dr. S. M. Burnett; A Report of Cases of Pulsating Exophthalmos, by Dr. W. H. Wilder; A Group of Uncommon Intra-ocular Tumors, by Dr. C. S. Bull; A Unique Intra-ocular Tumor, by Dr. E. Jackson; Angeio-sarcoma of Apparent Retinal Origin, by Dr. W. B. Johnson; The Value of Repeated and Differently Placed Exposures to the Röntgen Ray in Determining the Location of Foreign Bodies in and about the Eyeball, by Dr. C. A. Oliver; Congenital Ptosis and Epicanthus, by Dr. R. Sattler; Resection and Advancement of the Levator Palpebræ Muscle in Traumatic Ptosis, by Dr. C. A. Oliver; Diphtheritic Conjunctivitis, by Dr. Myles Standish; The Pathology of Chronic Pseudo-membranous Conjunctivitis, by Dr. L. Howe; Why Ophthalmological Societies should Approve Créde's Method for the Prevention of Ophthalmia Neonatorum, by Dr. L. Howe; Trophic Keratitis, with a Case occurring in Caisson Disease, by Dr. G. C. Harlan; Is there ever a So-called Serous Iritis without an Involvement of the Ciliary Body or Chorioid? by Dr. W. Cheatham; A Summary of the Examination of the Eyes in Pupils in Public Schools of Memphis, by Dr. J. L. Minor; The Indications for the Use of Mydriatics in Refraction, by Dr. E. Jackson; The Law of Refraction-change following Increase or Decrease in Body Weight, by Dr. G. M. Gould; An Interesting Case of Refraction, by Dr. J. O. Tansley; A Series of Consecutive Cataract Operations, by Dr. R. L. Randolph; So-called Accommodation in a Lensless Eye, with a Report of a Case, by Dr. J. A. White; The Removal of a Piece of Steel Imbedded in the Crystalline Lens, by Dr. W. Thomson; The Removal of a Piece of Steel from the Vitreous, the Position of the Foreign Body being Determined by the Presence of a Scotoma in the Field of Vision, by Dr. C. A. Oliver; Taxis in Increased Intra-ocular Tension, by Dr. S. O. Richey; Some Studies in Detachment of the Retina, by Dr. T. H. Fenton; Retinitis Proliferans, by Dr. J. E. Weeks; A Case of Retinitis Circinata, by Dr. E. Fridenburg; A Study of Some of the Ophthalmic Changes in Chlorosis, Leucæmia, and Leucocythæmia, by Dr. C. A. Oliver; A Group of a Few Cases of Optic Atrophy due to Sexual Excess, by Dr. J. A. Spalding; Hysterical or Functional Blindness, by Dr. A. A. Hubbell; Tobacco Amblyopia, with Autopsy and Microscopical Examination of the Specimens, by Dr. G. de Schweinitz; Marked Impairment of Central Vision Following Prolonged Use of the Affected Eye, by Dr. S. Theobald; A Case of Mental Disease in which Amnesic Aphasia and Agraphia were Prominent Symptoms, by Dr. H. F. Hansell; Cholesterin Crystals in the Opaque Lens of a Child, by Dr. L. A. W. Alleman; and a demonstration of Dr. Reid's ophthalmometer, by Dr. R. Murdoch.

The American Otological Society.—The thirtieth annual meeting will be held in Washington on Tuesday, May 4th, under the presidency of Dr. Arthur Mathewson, of Brooklyn. The programme includes the following papers: The Differential Diagnosis Between Diseases of the Sound-conducting and Sound-perceiving Apparatus, by Dr. E. B. Dench, of New York; Ear Complications of Influenza, by Dr. W. P. Eagleton, of Newark; What Symptoms should we Consider Most Important as to the Advisability of an Operation in Mastoid Disease? and A Case of Extreme Deafness in which Great Improvement of Hearing Followed the Use of Pilocarpine, by Dr. Gorham Bacon, of New York; Goutiness in its Relations to Diseases of the Ear, by Dr. A. H. Buck, of New York; and Deviated Nasal Sæpta in Ear Diseases, with a New Operation for their Correction, by Dr. J. Oscroft Tansley, of New York.

The American Association of Genito-urinary Surgeons.—The eleventh annual meeting will be held in Washington on May 4th, 5th, and 6th, under the presidency of Dr. Francis S. Watson, of Boston. The programme contains the following titles: A Report of Post-mortem Examinations of Some Cases of Movable Kidney, by Dr. Francis S. Watson; Clinical Observations on Loose and Displaced Kidney, by Dr. John P. Bryson, of St. Louis; A Report on the Surgical Anatomy of the Kidney, by Dr. George E. Brewer, of New York; The Results after Nephrectomy for Renal Tuberculosis, by Dr. L. Bolton Bangs, of New York; The Detection of Kidney Stone, by Dr. Edward Martin, of Philadelphia; A Modified Scrotal Resection Clamp, by Dr. Bransford Lewis, of St. Louis; Another Urethroscope, by Dr. W. K. Otis, of New York; Priapism, by Dr. R. W. Taylor, of New York; Exstrophy of the Bladder, with other Congenital Defects, by Dr. Roswell Park, of Buffalo; A Case of Cystine Calculus in the Male Bladder, by Dr. Paul Thorndyke, of Boston; A New Method of Removing Vesical Polypi, with Cases, by Dr. George Chismore, of San Francisco; A Report of a Case, by Dr. William Judkins, of Cincinnati; Nephrectomy for Cystic Adenoma in a Pregnant Woman, by Dr. Charles L. Scudder, of Boston; Urinary Inflammations and Disorders in Connection with Oxaluria and Lithæmia, by Dr. Bransford Lewis, of St. Louis; Chronic Contractions of the Prostatic Fibres encircling the Vesical Neck and Tuberculous Necrosis of the Prostate, by Dr. Eugene Fuller, of New York; A Report of a Fatal Case of Prostatic Abscess, by Dr. George E. Brewer; Photography of the Interior of the Living Urinary Bladder, by Dr. William K. Otis, of New York; A Report of a Case of Hernia Testis, by Dr. G. W. Allen, of Boston; An Aid to the Discovery of the Tubercle Bacillus in the Urine, by Dr. John P. Bryson, of St. Louis; and Urethro-rectal Fistula, by Dr. James P. Tuttle, of New York.

The American Pædiatric Society.—The ninth annual meeting will be held in Washington on May 4th, 5th, and 6th, under the presidency of Dr. Samuel S. Adams. The programme includes the following titles: The president's address, by Dr. Samuel S. Adams; Antitoxine and Intubation in the Treatment of Diphtheritic Croup, by Dr. J. Lewis Smith; A Case of Tic Convulsif, by Dr. J. C. Wilson; A Synopsis of Fifty-eight Cases of Empyema Operated upon During 1896 in the Children's Service of Mt. Sinai Hospital, by Dr. B. Scharlau; A Case of Congenital Diaphragmatic Hernia Associated with Recurrent Attacks Simulating Asthma Dyspepticum, by Dr. William D. Booker; Two Cases of Unilateral Tremor in Children, by Dr. J. P. Crozer-Griffith; A Frequent Significance of Epistaxis in Children, by Dr. J. Henry Fruitnight; Two Cases of Meningitis, Apparently Tuberculous, with Recovery, by Dr. George N. Acker;

Congenital Laryngeal Stenosis, by Dr. Joseph O'Dwyer; Clinical Histories and Autopsies on Certain Types of Disease in Infants and Children, by Dr. William P. Northrup; Adherent Pericardium in Children, by Dr. William Osler; Sarcoma of the Skin in the Newly Born, by Dr. A. Jacobi; Abscess of the Brain in Infancy, with a Report of Three Cases, by Dr. L. Emmett Holt; A Brief Analysis of a Hundred Cases of Frank Pneumonia, by Dr. F. Gordon Morrill; Hereditary Tendency in Pædiatric Practice, by Dr. Floyd M. Crandall; Lithæmia in Children, by Dr. B. K. Rachford; Retro-œsophageal Abscess, by Dr. J. P. Crozer-Griffith; A Case of Exophthalmic Goître Apparently Cured by the Use of Thyreoid Extract, by Dr. Charles Gilmore Kerley; A Case of Goître Treated by the Thyreoid Extract, by Dr. Francis Huber; The Use of Thyreoids in Diseases other than Cretinism, by Dr. Henry Koplik; the report of the committee on the collective investigation of the antitoxine treatment of pharyngeal diphtheria in private practice, by Dr. William P. Northrup; Retained Intubation Tubes: Causes and Treatment, by Dr. Joseph O'Dwyer; A Case of Diphtheria of the Eye, by Dr. T. M. Rotch; an exhibition of apparatus for the rapid diagnosis (bacteriological) of diphtheria, by Dr. Henry Koplik; A Case of Suppurative Nephritis, by Dr. Rowland G. Freeman; Pre-natal Infection Causing Diseases which Develop during the First Month of Life, by Dr. Edward P. Davis; Fatal Cases of Typhoid Fever in Early Life, by Dr. Henry D. Chapin; A Case of Acetanilide Poisoning in a Newly Born Infant—Absorption from Umbilical Wound, by Dr. Irving M. Snow; Retarded Development of the Inferior Maxilla due to Injury by Obstetric Forceps, by Dr. Francis Huber; The Prophylaxis of the Complications of the Exanthemata, by Dr. C. G. Jennings; the presentation of a specimen showing congenital deformity of the biliary ducts, by Dr. Charles P. Putnam; and An Unusual Case of Erythema Multiforme, by Dr. Floyd M. Crandall.

The Association of American Anatomists.—The ninth annual meeting will be held in Washington on May 4th, 5th, and 6th, under the presidency of Dr. Frank Baker. The programme contains the following titles: The president's address, by Dr. Frank Baker; Remarks on the Transmission of Acquired Characteristics as Illustrated in the Human Cranium and Teeth, by Dr. Harrison Allen; Notes on the Biceps, by Dr. Burt G. Wilder; The Classification of the Muscles of the Back, by Dr. Frank Baker; The Definitive Encephalic Segments and their Designation, by Dr. Burt G. Wilder; The Comparative Anatomy of the Cerebellum and On Brain Preservation, by Dr. Beto B. Stroud; The Relative Anatomy of the Foramen of Munro, by Dr. Daniel K. Shute; Anatomical Models, with Explanatory Remarks, by Dr. William P. Carr; A Possible Morphological Basis for Certain Diseases of the Lungs, by Dr. Woods Hutchinson; and The Shape and Relations of the Duodenum, by Dr. Thomas Dwight.

Feigned and Hysterical Blindness.—At a recent meeting of the Philadelphia County Medical Society (*Medical and Surgical Reporter*, April 17, 1897), Dr. Edward Jackson read an interesting paper entitled Tests for Visual Malingering and Hysterical Blindness, of which the following is the substance:

There are some symptoms of hysteria, especially such as the alterations in the visual fields, which are of a character not likely to be simulated by the malingerer. But when it comes to symptoms that are likely to be feigned, our tests do not discriminate between the disease, hysteria, and voluntary feigning. Hence the tests that I am about to refer to generally reveal that the condition present is not either hysterical or feigned, but other symptoms and the general aspect and surroundings of the case must be considered before determining which of these it is. Tests of the field of vision may throw important light upon this question, as the hysterical field usually exhibits certain distinct characteristics, while feigned impairment of the visual fields is likely to follow closely one of the common forms of hemianopsia, or to promptly show the fraud by incongruous or impossible symptoms. Further than this I do not propose to refer to tests for the field of vision, but simply to speak of the tests for acuteness of vision at the centre of the field, vision as commonly taken with test letters.

In my experience, feigning most frequently takes the form of exaggeration of an actually existing visual defect; or of ascribing a defect previously existing to some particular cause or accident. It is quite possible that this latter may be done honestly, without the slightest intention to deceive, as defective vision in one eye may exist many years without being noticed.

To avoid falling into error by accepting as correct a statement that underestimates the acuteness of vision actually present is by no means easy. A large proportion of patients will stop reading and say they can not see any more; yet with a little coaxing they can be induced to read one or two additional lines of smaller test letters. Simple disinclination to make the effort to observe closely prevents them from revealing their true visual acuteness; and when to this is added the desire to make as much of a disability as possible, the obstacle may become insurmountable. However, tact and patience will do much.

One plan for overcoming reluctance to reveal the full acuteness of vision is to use a card having several lines of letters too small to be read at the distance at which it is placed. Then, if we give the subject the impression that he is expected to see all of these, he will feel gratified to find that he actually can not do this, and gratitude for this supposed demonstration of a desired impairment of vision may incline him to co-operate heartily in the test, and read the lines that should really be just visible to the normal eye at the given distance. Even the malingerer feels that the truth is the safest thing, if he thinks it will answer his purpose.

A popular impression that is valuable in this connection is that glasses help all kinds of defective sight; and that the exhibition of normal acuteness of vision with a glass will not impair the claim for impairment of vision from disease or injury. By very careful objective determination of the correcting lenses (and for this purpose skiascopy is the only practical method), and the placing of them before the eyes, if vision is at all improved by them, it is very often possible to secure the patient's co-operation to such an extent as to demonstrate his full visual power. This plan has, in my hands, proved very effective in the examination of claimants for pensions. These claimants believe they are entitled to pensions, at least as much entitled to them as others who receive them; and they have all lost their power of accommodation, and (emmetropia being very rare) they all, without correcting lenses, have imperfect vision. To attempt to ascertain the correcting lenses by the subjective method is simply a waste of time, and a source of vexation and irritation. But if the correcting lens is accurately determined objectively and placed before the eye, the claimant will, almost invariably, co-operate and reveal the full acuteness of vision he possesses. Over and over again I have thus been able to demonstrate vision better than with the Snellen normal standard in those claiming pensions on the ground of visual impairment.

When *blindness of one eye* is feigned, well-known tests readily reveal it. The best of these are the diplopia test, and Harlan's test. The placing before the seeing eye of a prism too strong to be "overcome," by displacing the retinal image, causes binocular double vision, if the image is still seen in the normal position by the eye falsely alleged to be blind. This test may be rendered most effective by first holding a prism before the seeing eye in such a way that its edges shall come before the pupil, thus causing uniocular diplopia by the formation in the one eye of two images, one from rays passing through the prism, and the other from rays passing beside it. Or one may take the double prism, and, holding it with the line of junction in front of the pupil, get the same uniocular diplopia. Having thus demonstrated to the claimant that he sees double with the seeing eye alone, we proceed to ask about the position of the images when the prism is held in different directions; and then slip the prism completely in front of the pupil, so that in one eye rays all unite to form a single image, and diplopia remaining becomes positive evidence of binocular vision.

The other standard test, proposed by Dr. George C. Harlan, consists in placing before the alleged blind eye a plane glass or its correcting lens (the latter often perceptibly improving its vision), and before the "seeing" eye a strong spherical lens, either convex or concave, which will entirely prevent clear vision at the distance of the test letters. The claimant is told to keep both eyes open and read what he can through the glasses; and commonly he does so, supposing that he does it with his "seeing" eye, which has been excluded. This test is particularly valuable because of its simplicity, which allows of its ready explanation before a jury, and because the claimant can himself be convinced that his fraud is fully detected, by asking him to read the same letters after the hand has covered what he alleged to be his blind eye. More than one suit for damages has thus been brought to an abrupt termination.

Feigned blindness of both eyes has heretofore been regarded as more difficult to detect than feigned uniocular blindness. Fuchs mentions the Schmidt-Rimpler method of telling the claimant to look at his own hand, which the blind man does without hesitation, while "a malingerer will perhaps purposely look in the wrong direction." Occasionally the malingerer can be startled into betrayal of the fraud. I once heard Dr. William Osler tell of a young woman who made the round of the London hospitals professing complete blindness without apparent cause. She was led into the Moorfields Hospital, and an assistant suddenly held a live frog before her eyes; she ran out screaming. Not all ophthalmic hospitals have frog tanks.

Priestley Smith has recently given us a most perfect method of recognizing feigned blindness, although he has done it in such a modest, matter-of-course way that it has not yet attracted the attention it deserves, in the Ingleby Lectures on The Mechanism of Binocular Vision, and the Causes of Strabismus.* To illustrate the subject of diplopia in connection with strabismus in children, he narrates the following case:

"A few months ago a prisoner, awaiting trial for burglary with violence, awoke one morning blind in both eyes, so he said. The prison surgeon had no doubt that he was shamming, but wanted positive evidence one way or the other, and we examined him together. The man declared himself to be quite dark in both eyes, and acted the part of a blind man fairly well, overdoing it a little. The pupils were already under atropine, and could therefore give no evidence as to the light reflex. A lighted candle was placed before him in a dark room. He was not required to 'look' at the candle, being nominally blind, but the candle was placed about where he appeared to be looking. A prism was then placed before one eye, its base inward; instantly the eye moved outward. The prism was removed, and the eye moved inward. The man was told that his blindness would certainly disappear as quickly as it came, and he probably understood that the fraud would get him into more trouble if persevered in. His sight was soon restored. Now if this man could have carried his blindness into the dock, a merciful judge and jury would not improbably have felt that a higher tribunal had already visited him with a heavy punishment, or at least that he was incapacitated for further crime, and would have dealt with him very leniently. As a matter of fact he was a particularly daring and dangerous criminal, and had during a previous imprisonment attempted the life of the prison surgeon. He received a long sentence."

This method is so perfectly simple and reasonable that it seems remarkable that it should not have been thought of before. Doubtless, it would have been sooner brought into use if the feigning of binocular blindness were not comparatively rare. I have tried it a number of times, not on any case of feigned binocular blindness, as none has been encountered, but upon eyes actually blind; and upon those who, understanding the test, attempted to defeat it by not turning the eye before which the prism was placed. It is a test that may be relied on to reveal feigning of binocular blindness in all cases, except those in which along with blindness there is pretended an inability to keep the eyes open, or constant movement of the eyes, nystagmus.

The best prism is generally one of six or eight degrees, held with its base toward the temple. Most persons involuntarily "overcome" such a prism by turning the eye correspondingly toward the nose, to escape diplopia, even in spite of an effort not to do so. It would be possible, of course, for a special case of heterophoria not to show the characteristic movement with this particular prism, but a trial of other prisms, or of the same prism with its base turned in the opposite direction, should reveal this characteristic movement. When the attempt is made to prevent such movement, to ignore the double images, the movement of deviation may be so gradual or so delayed as to escape detection, when the prism is placed before the eye; but on removal of the prism the "recovery" is prompt and characteristic. The same test may be applied for the detection of feigned uniocular blindness. The prism held before the seeing eye causes the characteristic movement, but before a blind eye it causes none. It is a test that reveals not merely some light perception, but the presence of a comparatively definite and clear perception of objects.

When the malingerer feigns not only binocular blindness, but also nystagmus and an inability to open the eyes, he may be placed under the influence of a general anæsthetic and tested and watched during the period of recovery, when he will most certainly fail to sustain the fraud.

By the methods thus briefly reviewed, I believe it to be possible in all cases to detect feigned blindness; but the distinction between malingering and hysterical blindness has to be based on other evidence, and can not be determined simply from the results of these tests.

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* *British Medical Journal*, June 20, 1896.

The American Surgical Association.—The eighteenth annual meeting will be held in Washington on May 4th, 5th, and 6th, under the presidency of Dr. John Collins Warren, of Boston. The following titles are included in the programme: The Influence of Anæsthesia on the Surgery of the Nineteenth Century, by Dr. John Collins Warren, of Boston; The Indications for and the Technique of Hysterectomy, by Dr. John Homans, of Boston (to be discussed by Dr. Albert Vander Veer, of Albany, Dr. H. H. Mudd, of St. Louis, Dr. F. E. Lange, and Dr. A. G. Gerster, of New York); The X Rays in Surgery, by Dr. J. William White, of Philadelphia (to be discussed by Dr. W. W. Keen, of Philadelphia, Dr. C. B. Nancrede, of Ann Arbor, Dr. G. R. Fowler, of Brooklyn, and Dr. M. H. Richardson, of Boston); Tendon Anastomosis, by Dr. E. H. Bradford, of Boston (to be discussed by Dr. T. G. Morton, of Philadelphia, and Dr. J. E. Moore, of Minneapolis); The Operative Treatment of Irreducible Dislocations of the Shoulder, Recent or Old, Simple or Complicated, by Dr. Edmond Souchon, of New Orleans (to be discussed by Dr. J. Ewing Mears, of Philadelphia, and Dr. Joseph Ransohoff, of Cincinnati); The Surgical Treatment of Suppurative Pericarditis, by Dr. J. B. Roberts, of Philadelphia (to be discussed by Dr. C. B. Porter, of Boston, Dr. Roswell Park, of Buffalo, Dr. J. F. Thompson, of Washington, and Dr. J. M. Gaston, of Atlanta); The Technique of Cranial Surgery, by Dr. L. M. Tiffany, of Baltimore (to be discussed by Dr. W. W. Keen, of Philadelphia, Dr. R. F. Weir, of New York, Dr. J. Parmenter, of Buffalo, and Dr. S. J. Mixter, of Boston); The Indications for and Technique of Extirpation of the Ureter, by Dr. Christian Fenger, of Chicago (to be discussed by Dr. A. T. Cabot, of Boston, Dr. A. G. Gerster, of New York, Dr. C. Parkhill, of Denver, and Dr. Rudolph Matas, of New Orleans); The Successful Treatment of Sarcoma by Electrolysis and Cataphoresis, Combined with the Internal Use of Donovan's Solution, by Dr. J. McFadden Gaston, of Atlanta; A Preliminary Comparison of Methods and Results in Operative Surgery at the Sea-level and in Places of High Altitude, by Dr. Charles A. Powers, of Denver; Litholapaxy: the Crushing Resistance of Stone and the Measured Strength of the Lithotrite, by Dr. W. S. Forbes, of Philadelphia; A Case of Extirpation of Popliteal Aneurysm with Remarks upon the Subject, by Dr. J. Ford Thompson, of Washington; The Operative Treatment of Irreducible Dislocations and Simple Fractures (General), by Dr. Joseph Ransohoff, of Cincinnati; Epiphyseal Separations of the Head of the Femur, by Dr. R. H. Harte, of Philadelphia; A New Apparatus for the Fixation of Bones after Resection and in Fractures with a Tendency to Displacement, with a Report of Cases, by Dr. Clayton Parkhill, of Denver; Abscess of the Liver, by Dr. George Ben Johnston, of Richmond; Habitual Dislocation of the Shoulder Joint, by Dr. Herbert L. Burrell, of Boston; The Origin of Appendicitis, by Dr. Dudley P. Allen, of Cleveland; The Surgical Treatment of Tumor of the Liver, with a Report of a Case, by Dr. J. W. Elliot, of Boston; and A Case of Chronic Intestinal Obstruction from an Incomplete Volvulus of the Sigmoid Flexure, by Dr. Maurice H. Richardson, of Boston.

On Wednesday afternoon, May 5th, the association, in conjunction with the Alumni Association of the Jefferson Medical College, will attend the unveiling of the statue of the late Professor Samuel D. Gross, on the Smithsonian grounds, near the Army Medical Museum. The exercises will include a prayer by the Rev. B. L. Whitman; the presentation of the statue to the government, by Dr. Claudius H. Mastin; the unveiling of the statue, by Miss Adele Horwitz; the acceptance of the statue, on behalf of the government, by the surgeon general of the army; an address by Dr. William W. Keen; and a benediction.

The Association of Alumni of the New York Hospital held its annual meeting and dinner, at the University Club, on Friday evening, April 23d. Dr. Henry D. Noyes was chosen president for the ensuing year.

Apparent Death and Premature Burial.—In an article on this subject in the *Journal des sciences médicales de Lille* for April 3d, M. Delassus says that the thought of being buried alive is a nightmare which haunts many persons, and they leave directions in their wills or to their families regarding the precautions to be taken in order to prevent such an occurrence.

The extraordinary tales which have been published of these hasty burials are not generally of sufficient authenticity to establish their truth, but very frequently even the most thoughtful authors seem inclined, by arousing the imagination of their readers, to anticipate the possibility of such a calamity. The following account is a proof of this: At the Chamber of Deputies one of the most influential members was combating a procedure of the law concerning burials and cremations. "Permit me, gentlemen," he said, "to cite an example. A young man was very ill with an infectious disease which rapidly became aggravated; the case was considered hopeless, and at the end of a few days the physician announced the death of the patient to the family. He was prepared for burial and all the funeral arrangements were completed, when the supposed corpse aroused from its lethargy and sat up in the coffin. That young man, gentlemen, was myself." The impression produced by such a declaration, says M. Delassus, may be imagined. It was said to have been nothing less than a trick of the orator to give greater weight to the argument he presented.

In the majority of instances the patient is at the point of death, with scarcely a breath left, and clinging to life by a thread so frail that the least shock, the least incident may snap it, and that without consciousness returning, without the anguish and the dread of a terrible agony which has been so dramatically portrayed by writers. A moment's reflection will convince any one that this could occur only very exceptionally, not to say never. For, suppose that a person in a condition of apparent death is prepared for burial, nailed in the coffin, and put into the grave, asphyxia would quickly accomplish its work and transform the supposed corpse into a real one. That there may have been instances in which living persons have been buried alive, says M. Delassus, may be affirmed, but such a statement is based only on the probabilities presented by a number of cases in which the reputed dead persons failed to be buried. It is the merest supposition, however, for direct observations are lacking to corroborate these instances, as the supposed victims did not return to impart their impressions or had not the leisure to write of their experience beyond the tomb.

M. Delassus remarks that lethargy is a manifestation of hysterical neurosis which may, though rarely, simulate death, and he cites the following case, which came under M. Icard's observation, as an instance: A priest had been confined to his bed for a long time and the attending physician had pronounced him dead. According to custom, the coffin was left open in the church while the priests watched night and day. On the second day the deceased sat up in his coffin to the astonishment of those around him, and, no doubt, greatly to his own. He had come out of the lethargy, and at the present time he was in remarkable health.

Syncope, more than any other affection, completely simulates death, but it can not last long without causing real death, so that no fear need be entertained of burying a living subject in such cases.

Eclampsia at the comatose period may simulate death, and Devergie recalled a remarkable instance, of which M. Delassus gives a description.

The different modes of asphyxia, he says, easily lead to a condition of apparent death which calls for prolonged and energetic measures. It is the same in cases of lightning-stroke and electric discharges which the common use of electricity is now rendering more and more frequent.

Similar doubts may exist in cases of anæsthesia, poisoning by narcotics, certain forms of cerebral apoplexy, and cholera. It has been observed that in nearly all these cases death occurs suddenly and rapidly in individuals who have previously been free from disease, and they are not to be compared in any way with those cases in which death is only the natural issue of a slow and progressive disease caused by lesions of one or more of the important organs. Therefore, the most elementary prudence is required to assure one's self by all possible means of the reality of death. M. Delassus thinks that M. Icard's proposed method of determining this is very practical and important. It is based on the following propositions: In real death the circulation of the blood is definitively suppressed and arrested; in apparent death, whatever may be the cause, the blood circulates very slowly and feebly, although the most careful auscultation may not reveal the movements of the heart. Now, if circulation is produced, to any degree whatever, absorption of substances introduced into the organism must also take place, and if this absorption can not be ascertained, death has taken place. Absorption is synonymous with life; there can not be one without the other. Therefore, the proper substance to be absorbed and the proper tract by which it is to be absorbed should be chosen, and afterward its presence should be ascertained in the blood or in other medium, in order to determine if absorption has taken place.

The digestive, anal, pulmonary, and venous tracts present difficulties that may cause mistakes, and for this reason the subcutaneous channel is preferable, as it is accessible to simple hypodermic injections.

The substance employed should combine a number of qualities: It should be soluble in water; it should not be found in the organism normally or accidentally; it should not be toxic or caustic; and, finally, it should be easily recognizable.

M. Delassus gives a detailed account of the different substances proposed by M. Icard, and the methods employed, which, he says, are not complicated, and may be of much use in doubtful cases.

The Northwestern University Medical School (Chicago Medical College).—The secretary, Dr. N. S. Davis, Jr., informs us that next year applicants for admission must present diplomas or certificates from recognized colleges, schools of science, academies, or high schools, or sustain an examination in the following subjects: English language; English literature; mathematics; algebra, through radicals and quadratics; geometry, plane and solid; physiology (Martin's *Human Body*); geography; history: United States history, Smith's *Smaller History of Greece*, Allen's *History of Rome*, or Myer's *General History*; physics; two of the following subjects: botany, zoology, astronomy, geology, chemistry, history of England, Fisk's *Civil Government*; Latin, the subjects covered in three years of study; and either of the subjects covered in two years of Greek, German, or French, or one year of German and French. For part of the Latin and Greek, French or German, two years' work, higher mathematics, physics, chemistry, or biology may be substituted.

The American Medical Editors' Association will hold its annual meeting at the Aldine Hotel, in Philadelphia, on Tuesday evening, June 1st, at seven o'clock, and a dinner, at the same place, at 8.30 o'clock.

An Epidemic of Insanity in Brussels.—At a recent meeting of the Société royale des sciences médicales et naturelles de Bruxelles (*Gazette hebdomadaire de médecine et de chirurgie*, April 4, 1897), M. De Boech referred to the current belief in certain places that an epidemic of insanity existed in Brussels. If by the word epidemic was meant the sudden and unforeseen outbreaks of certain morbid affections which remained latent at other times, there was no such epidemic in Brussels at present.

Without doubt, the number of admissions to the insane ward of the Saint-Jean was larger in December than in November; but it was lower than in June. In reality, for the past ten years, the number of insane patients had progressively increased, for in 1887 it was 100, and in 1896 it was 274.

The number of alcoholics who remained in the asylums for treatment had increased in such proportions that it had doubled in ten years, in 1882 having been 507, and in 1892, 1,112. The population of the large asylums of France was about 500, so that if the alcoholics who remained for treatment had returned to their homes, it would not have been necessary to build the new asylum at Morteil, but the other asylums were so crowded that the erection of a new building had been imperative.

The National Cat Club.—Under this name, says a writer in the *Gazette des eaux* (cited in the *Echo médical du nord* for April 4th), there exists in London an organization which is devoted to the study of cats for medical purposes. According to the account, nothing that concerns cats remains unknown to the members of this club. At the last annual meeting the secretary called the attention of the members to the well-known property possessed by cats of giving out electricity when their fur was rubbed in dry weather. Cats, particularly those of a certain age, are evidently natural reservoirs of electricity, and they may be transformed into electric accumulators.

A well-charged cat may be used for treatment in nervous affections. By keeping a number of these living sources of feline galvanism around his person a neurasthenic individual may easily supply the deficiency of nervous influx which makes the affection so intolerable.

A white spot in a cat's fur is a sign of electric inferiority, at least if the cat is not entirely white. The National Cat Club intends to carry on the production of uniformly colored cats. It announces, also, the formation of a limited company which will soon be able to supply all demands, and will possess a complete assortment of cats of guaranteed origin, without spots, and having sufficient electrical intensity for all the most varied forms of hysterical neurasthenia.

A Supposed Case of Poisoning with Pennyroyal.—The following case is related by Mr. W. T. Allen in the *Lancet* for April 10th: A woman, aged twenty-three years, was admitted to the parish infirmary, Liverpool, on March 15th, in an almost collapsed condition, suffering from symptoms of acute gastritis. She stated that vomiting began four days previously after she had taken a tablespoonful of pennyroyal [preparation not specified]. She had taken this drug to bring on menstruation, which had been in abeyance for six months. The excessive vomiting continued despite the usual remedies, but ultimately ceased under the influence of morphine and rectal alimentation. The patient, however, gradually sank, and died on March 19th. She had been an inmate of the infirmary for a week at the beginning of the month, and had then suffered from slight anæmia and dyspepsia, but had not vomited during that period.

A post-mortem examination was made, and the author found the stomach extremely congested, especially toward the cardiac end, the small intestines also showing thickening of their coat and intense congestion, most marked in the lower part of the ileum. The large intestines were also congested, even down to the rectum, but not to the same degree as the stomach or ileum. The uterus was normal in size, and there was nothing noticeable in the other organs except some congestion of the brain. The author states that at the inquest evidence corroborative of the woman's statement was given; but as the druggist who had sold the pennyroyal said that in thirty years' experience he had never heard of a case of poisoning by this drug, the jury returned a verdict to the effect that death was due to gastro-enteritis set up by some irritant poison, but did not decide what the poison was. It is in deference to their verdict, the author says, that he has put the word "supposed" in the heading to this note. Mr. Allen states that on looking up the literature of the subject he has been able to find only one case of poisoning by pennyroyal, which is recorded in Dixon Mann's *Forensic Medicine*. In that case a pregnant woman, who was seen immediately after taking a drachm dose of the drug, had vomiting, delirium, and opisthotonus, but subsequently recovered.

Interstitial Injections of Methylene Blue in Epithelioma of the Face.—In the *Normandie médicale* for April 1st, M. Dubarry relates the following case: The patient, a woman fifty-seven years old, stated that eighteen years before she had noticed a pimple of about the size of a pin's head on the right side of the chin. For ten years it had remained in about the same condition. She had never been alarmed until one day when, on scratching the spot, which had itched for some time, she provoked a hæmorrhage that lasted for four hours. She then consulted her physician, who advised a little operation, but the idea of an operation frightened her, and she allowed seven years to pass before again consulting a physician. During the last two years of this period the disease had greatly increased and the pimple had attained the size of a fifty-centime piece; the itching also had become more frequent and persistent, and the spot often bled, especially when the patient removed the scabs which covered it. An operation was again advised, but, as there was no suffering, the patient would not submit to surgical intervention. A year later the tumor had spread so rapidly that she decided to seek the advice of another physician, who, in view of the extent of the disease, strongly urged upon her the necessity of an operation, but she resolved not to have it done. Two years more passed, during which time the disease had progressed so rapidly that she became alarmed, and again sought the advice of a fourth physician.

At this time the scabby surface of the epithelioma occupied the entire right side of the chin from the hollow as far as the middle of the horizontal ramus of the maxilla; vertically, it extended beyond the fold of the lower lip, and beyond the body of the maxilla. The surrounding tissue was red, hard, and œdematous; and the lip was much thicker on the diseased side. The tumor was divided into four lobes, each one of which was covered with bloody scabs. When the author tried to separate them, a rather large quantity of bloody pus was discharged; he found also that the tumor was adherent to the periosteum of the maxilla.

An operation was urgent, but, owing to the cowardice of the patient and the great loss of skin which would have resulted, and would have been difficult to replace, the author resolved to try interstitial injections of methylene blue, although without any hope of success. M. Dubarry used a ten-per-cent. solution in distilled water, and during the first applications he injected as much as thirty grains. Each time he saturated the entire diseased surface, pushing the needle as deep as possible until it touched the periosteum, and throwing the liquid in all directions. This was repeated as often as it was necessary. The tumor and all the red tissue surrounding it became of a bluish color. Several times hæmorrhages were provoked, but they were not alarming or of long duration, and a slight compression rapidly arrested them.

After the first application the intense itching completely disappeared. During the first three months the author practised an injection regularly every two days, the average quantity of liquid injected being fifteen grains. After a month of this treatment the tumor noticeably diminished in size. After the third month it had diminished one half; cicatrization occurred from the periphery toward the centre. As recovery approached a more considerable resistance was felt; the tissues became more compact and denser. During the fourth and fifth months of the treatment only one or two injections a week were practised; the quantity of liquid used was also diminished in proportion as recovery advanced, and during this stage not more than two or three divisions of a Pravaz syringe were filled for the injection.

In the beginning of this treatment, when the quantity of liquid injected was very large, the urine became of a decided blue color, which disappeared gradually, and it was sometimes twenty-four hours after the injection was practised before the urine regained its normal appearance. At no time did the patient feel pain in the kidneys or experience trouble on micturition. In June, 1896, the treatment was stopped, five months after the first injections. In February, 1897, there was a firm cicatrix on the spot where the epithelioma had been, which was crossed in all directions by fibrous bands which were very resistant to the finger and adhered to the maxilla. The cicatrix was scarcely larger than a two-franc piece.

With regard to a complete recovery, the author states that, up to the present time, all the indications lead him to think that recovery will be permanent. Even if a relapse should occur, the same treatment may be resorted to again.

Methylene blue, says the author, seems to possess peculiar properties which are capable of making a profound change in the diseased cell or in the microbe which produces this affection. He is convinced that this mode of treatment will render great service, not only in superficial cancroids, but in the deep cancerous affections, notably of the face, provided, however, the diseased spot can be put in contact with the medicament. Each diseased element should be saturated with this therapeutic agent until the noxious principle is profoundly changed with it.

A Case of Angina Pectoris in which Erythrol Tetranitrate was used with Marked Benefit.—In the *British Medical Journal* for April 10th the following case is related by Dr. J. B. Bradbury: The patient, a man seventy-five years old, began to suffer from angina pectoris a year before; he became very feeble and the seizures were quite frequent. The symptoms were pain in the sternum, elbows, and fingers; quick, painful, jerky respiration followed, unless the attack was cut short by nitroglycerin or inhalation of nitrite of amyl, with absolute agony, and an indistinguishable pulse. A fiftieth of a grain of nitroglycerin had always to be taken to enable him to dress, undress, creep out into the sunshine, etc., and seven or eight such doses were required in the twenty-four hours. The attacks were induced not only by slight physical exertion but also by mental effort (such as the writing of a letter), and they would even occur during perfect rest or during sleep. In the intervals of the attacks the pulse was 70, soft, and easily compressible. After he had taken a tabloid of nitroglycerin (a fiftieth of a grain) the usual effects—throbbing at the temples, a fuller radial pulse, etc.—were felt, followed in two to three minutes by entire cessation of the pain and return of normal breathing.

Erythrol tetranitrate, in grain doses, was now suggested, and, without the author's knowledge, the patient, who was a physician, undertook some observations himself and afterward sent the author the following account: "Before taking the tetranitrate of erythrol at stated intervals I thought it would be instructive to ascertain by experiment the length of time the agent would afford immunity from the seizures of angina. It was taken, therefore, only when attacks were imminent, as known by pain supervening in the sternum, elbows, and fingers, before the breathing had become distressed or the point of agony approached. In this latter emergency nothing short of the inhalation of nitrite of amyl or the rapid mastication of nitroglycerin tabloids will lower arterial tension and afford relief. It would seem in my case that, notwithstanding the previously long-continued use of trinitrine, this tension was more quickly lowered and longer relieved than is shown in your diagram in the Bradshaw Lecture. Certainly in ten minutes I felt that the progress of the attack was arrested, and, as the figures below show, the interval of ease was more prolonged."

A table showing the use of the nitroglycerin by way of contrast is given by the patient, who stated that his system appeared to have become so insensitive to its action that one one hundredth of a grain three times a day was practically inert. "Life," he continues, "being rendered infinitely more tolerable and the potency of the remedy abundantly demonstrated, I determined upon taking it steadily, at about eight hours' interval, as a prophylactic. For three days there was immunity from attacks, although some weariness and oppression at the chest were wont to steal on after the lapse of six or seven hours from taking the tablets. I am now taking them four times in the twenty-four hours, and am sanguine enough to hope to keep the foe at bay altogether."

Dr. Bradbury says, in regard to the lowering of the pulse tension, that the initial fall depends on the mode of administration. If the drug is given in spirit and water (one grain in one drachm of alcohol and seven drachms of water), the tension begins to fall in from two to three minutes; if given in a pill and swallowed, the time is from twenty to forty minutes; if taken in tablet form and masticated, the time lies somewhere between the two. The best form of administration is undoubtedly the tablet form. The author states that the alcoholic solution which he originally recommended sometimes irritates the stomach on account of the amount of alcohol it contains, and unless a rapid action is required it is better to give the drug in the solid form. Erythrol tetranitrate, however, he says, was not introduced to replace amyl nitrite and nitroglycerin in cutting short attacks which have developed, but only to replace them in preventing the onset of the attacks. That it is capable of doing this much better than nitroglycerin, the best drug hitherto known for this purpose, Dr. Bradbury thinks the preceding case conclusively proves.

Preparations of Iron in the Treatment of Chlorosis and Anæmia.—At a recent meeting of the Société de thérapeutique, a report of which appears in the *Progrès médical* for April 3d, a discussion on this subject was opened by M. Bardet, who said that the majority of authors regretted that it had been generalized by including in it the treatment of various forms of anæmia, instead of limiting it to chlorosis. M. Bardet, however, was of the opinion that when it was necessary to employ iron preparations the special treatment became the same in chlorosis as in simple anæmia. He considered it difficult, in a discussion on therapeutics, to separate chlorosis, properly so called, and the various forms of anæmia. It had been well said that in the treatment of anæmia the principal indication was to suppress the cause and then the anæmia would disappear. But, he said, it was none the less true that the iron treatment of anæmia played a great part in therapeutical intervention, and consequently it would be prejudicial to leave out anæmia in a discussion on iron treatment. Moreover, he questioned whether it was correct to profess to be able to remove the causes, which were more frequently connected so closely with the effects that it was impossible to make out the precise limits between the cause and the effects.

The value of different preparations of iron had been the subject of much discussion; some authors had advocated the use of the free metal; others had recommended the iron salts; others, again, had given the preference to organic preparations, and among these several authors had adopted exclusively the albuminates. M. Bardet was convinced that all these discussions were useless, and that all iron preparations were good or bad according to the particular cases, not forgetting that everything depended on the absorption, and that this was itself dependent exclusively upon the digestion, and, as this was a most complex phenomenon, varying according to the individual, certain preparations might prove good for some persons and bad for others. All iron preparations might be tried, and the one that was tolerated by the patient would be the right one.

With regard to the different preparations of iron, M. Bardet preferred hæmoglobin, although there was another preparation which he thought should not be forgotten in a discussion on this subject. This was glycero-phosphate of iron, which he thought was destined to take an important place in therapeutics. Up to the present time it had not been easy of employment, owing to the difficulty in keeping it. M. Bardet, however, had made use of this salt in anæmic persons by combining an organic iron preparation with the glycero-phosphate of iron and particularly with the phospho-glycerate of lime. He had employed these combinations for the past three months with the best results.

The Association of American Physicians.—The twelfth annual meeting will be held in Washington on May 4th, 5th, and 6th, under the presidency of Dr. J. M. Da Costa, of Philadelphia. The programme includes the following titles: The president's address, by Dr. J. M. Da Costa; The Serum Test in Typhoid Fever, by Dr. George B. Shattuck, of Boston; Gall-bladder Infection in Typhoid Fever, by Dr. A. Lawrence Mason, of Boston; The Hepatic Complications of Typhoid Fever, by Dr. William Osler, of Baltimore; Urea Estimations in Cases of Typhoid Fever treated by the Brand Bath Method, by Dr. James Tyson, of Philadelphia; Cancer of the Stomach in Early Life, and the Value of Cells in Effusions in the Diagnosis of Cancer of the Serous Membranes, by Dr. George Dock, of Ann Arbor, Michigan; The Inflammations of the Colon, by Dr. Francis Delafield, of New York; The Reflex Neuroses of the Abdomen, by Dr. Norman Bridge, of Los Angeles, California; The Relation of Neurasthenic Conditions to the General Nutrition, with Reference to Body Weight, Blood Measurements, Excretion of Urea, Uric Acid, and Indican, by Dr. Robert T. Edes, of Jamaica Plain, Massachusetts; Two Cases of Erythromelalgia (Mitchell), by Dr. D. Webster Prentiss, of Washington; A Case of Pancreatitis followed by the Formation of a Cyst, by Dr. A. McPhedran, of Toronto, Canada; Angina Pectoris—its Relation to Dilatation of the Heart, by Dr. J. H. Musser, of Philadelphia; Pericarditis—Some Points in its Diagnosis and Treatment, by Dr. F. C. Shattuck, of Boston; Pneumonia in Private Practice, by Dr. M. Howard Fussell, of Philadelphia; Clinical Notes of a Case of Broncho-biliary Fistula, with a Report of a Case, by Dr. J. E. Graham, of Toronto, Canada; Diagnostic and Therapeutic Considerations with Respect to Certain Affections of the Upper Air Tract, by Dr. Beverley Robinson, of New York; Nervous Deafness in Diphtheria, by Dr. James C. Wilson, of Philadelphia; Types of Œdema in Infancy, by Dr. J. P. Crozer Griffith, of Philadelphia; A Further Communication on the Occurrence of a Hitherto Undescribed Form of Chronic Nephritis Unassociated with Albuminuria, by Dr. D. D. Stewart, of Philadelphia; A Study concerning the Cumulative Action of Digitalis, by Dr. H. A. Hare, of Philadelphia; The Röntgen Rays in Thoracic Diseases, by Dr. F. H. Williams, of Boston; The Chemical Properties of the Blood-pressure-raising Constituent of the Suprarenal Capsule, by Dr. John J. Abel, of Baltimore; On the Occurrence of the Fat-splitting Ferment in Peritoneal Fat Necroses, by Dr. Simon Flexner, of Baltimore; Further Studies on the Pathogenic Spirilla of the Schuylkill River at Philadelphia, by Dr. A. C. Abbot and Dr. D. H. Bergey, of Philadelphia; The Effects of Various Metals and Metallic Salts on the Growth of Certain Bacteria, by Dr. B. Meade Bolton, of Philadelphia, and Dr. W. G. Brown, of Columbia, Missouri; On the Appearance of Certain Amœba-like Bodies in the Blood of Vaccinated Monkeys (Rhœsus) and Children, and in the Blood of Variola, by Dr. Walter Reed, of Washington; An Epidemic of Cerebro-spinal Meningitis caused by *Diplococcus intracellularis meningitidis* (Jaeger), by Dr. F. H. Williams and Dr. William T. Councilman, of Boston; A Case of Levant Fever, by Dr. A. A. Smith, of New York; A Case of Adenoma of the Liver with Complications, by Dr. A. Jacobi, of New York; The Treatment of Lithæmia, by Dr. B. K. Rachford, of Cincinnati; A Note on the Earliest Possible Recognition of Tuberculosis, by Dr. James T. Whittaker, of Cincinnati; Antitoxic Serum for Tuberculosis, by Dr. E. A. de Schweinitz, of Washington; Primary Tuberculosis of the Kidney, by Dr. D. D. Stewart, of Philadelphia; and A Further Study of some of the Untoward Effects of the Bromides, by Dr. H. A. Hare, of Philadelphia.

Lucilia Hominivorax in Tonquin.—According to Depied (*Archives de médecine navale et coloniale*, 1897, page 127), says a writer in the April number of the *British Journal of Dermatology, Lucilia hominivorax* is not restricted to Guiana, Peru, and Mexico, where it every year causes many deaths. In 1889, Baurac, a French naval surgeon, published a case which came under his observation at Tay-Ninh, in Cochin-China (*Archives de médecine navale et coloniale*, November, 1889). In August and September, 1895, Depied saw two cases at Cho-Moi, in the hill regions of Tonquin. On the 8th of August an Annamite soldier was brought to the author for an affection of the scalp in which two openings were found about the occipital region communicating with fairly deep cavities. The borders of the openings were ragged, raised, and lumpy. The author injected an antiseptic solution into the cavities to remove the accumulated dirt, and two large nests full of larvæ were discovered. The larvæ were lying in a vertical plane (perpendicular to the surface of the scalp), closely packed together in several layers. As it proved difficult to remove them, owing to their being very adherent, chloroform was injected. The larvæ immediately became very lively, and were readily picked out. This was repeated five times altogether. On the 12th of August the cavities were quite empty, and healthy granulations springing up.

In September the author saw another case, also affecting the scalp, but in this instance there was but one nest. He also observed a nest of these larvæ in the skin of the belly of a horse, close to the genital organs. Although the larvæ were appearently larger than those observed in the Annamite soldier, they gave rise to the same flies. *Lucilia hominivorax* is not therefore restricted to man.

The Semi-centennial Meeting of the American Medical Association, which will be held in Philadelphia on the 1st, 2d, 3d, and 4th of June, bids fair to surpass in the character of the entertainment, the scientific papers, and the number in attendance any meeting which has heretofore been held.

The committee in charge have been able to obtain large and roomy places of meeting for the general meetings and the section meetings, all within a single block and within very short walking distance, or immediately adjacent to the largest and most comfortable of the Philadelphia hotels.

For the week preceding and following the meeting the committee of arrangements have also arranged for clinical courses, which will be open without charge to all physicians who may visit the city at that time. These courses cover every branch in medicine and its specialties, and will afford visitors the opportunity of seeing the active clinical work of all the great teachers of Philadelphia.

Original Communications.

ANALGESIA, THERMIC ANÆSTHESIA, AND ATAXIA,

RESULTING FROM FOCI OF SOFTENING IN THE MEDULLA OBLONGATA AND CEREBELLUM, DUE TO OCCLUSION OF THE LEFT INFERIOR POSTERIOR CEREBELLAR ARTERY.

A STUDY OF THE COURSE OF THE SENSORY AND CO-ORDINATING TRACTS IN THE MEDULLA OBLONGATA.

By HENRY HUN, M. D.,
PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM IN THE ALBANY MEDICAL COLLEGE.

(Concluded from page 584.)

We may summarize the most important results of the pathological examination as follows:

The pons lesion has destroyed the dorsal half of the right pyramidal (motor) tract and a few of the fibres of the left pyramidal tract. The medulla and cerebellar lesions have destroyed on the left side the antero-lateral ascending tract of Gowers, the direct ascending cerebellar tract of Flechsig, the descending cerebellar tract of Marchi, the descending root of the fifth nerve, and the greater part of the nucleus ambiguus, the motor nucleus of the glossopharyngeus and vagus nerves, as is shown diagrammatically in Fig. 11.

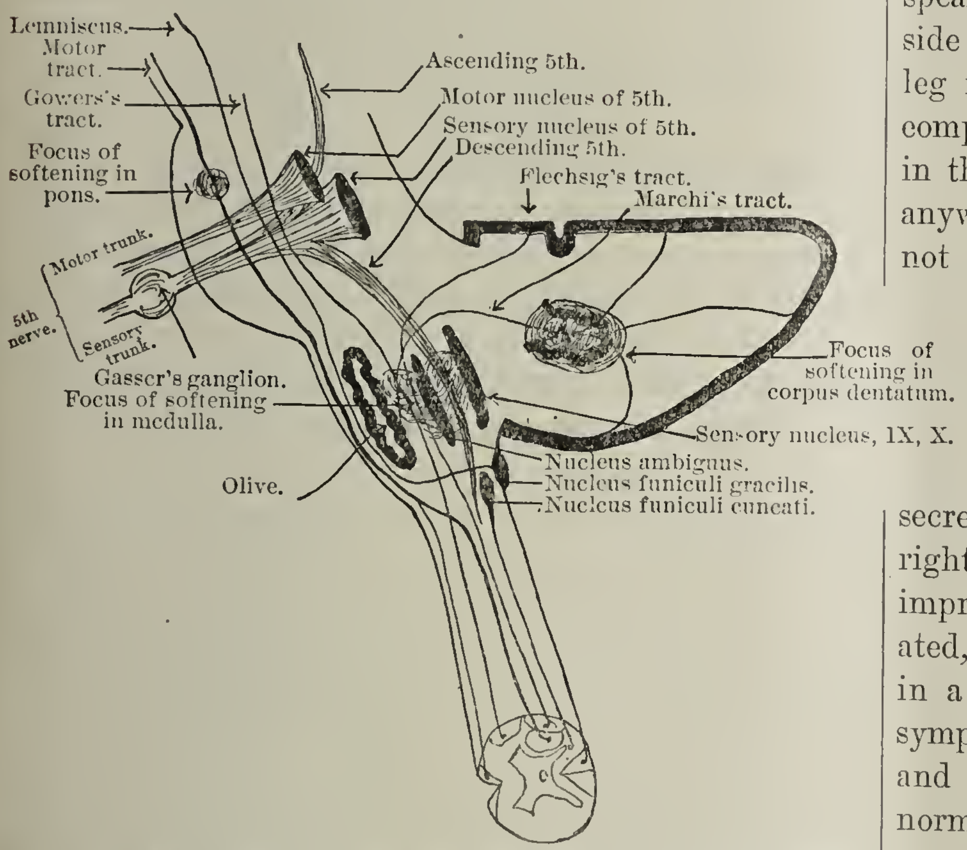

Fig. 11.—Diagram of the nerve tracts and nuclei destroyed by the foci of softening. The sensory and co-ordinating fibre tracts are purposely drawn out of their course in order that they shall not pass across the dark nuclei and thus lead to confusion.

In addition to the destruction of these important structures, which are in direct functional relation with the symptoms, there are other parts destroyed whose functions are so obscure that they can not be brought into relationship with this case. Thus, by the pons lesion, it is probable that some of the fibres connecting the cerebral cortex with the cerebellar cortex are destroyed, as well as some of those connecting the pons nuclei with the cerebral cortex, with the cerebellum, and with the nuclei of the formatio reticularis.

The medulla lesion has destroyed, in addition to those parts above mentioned, the fibres which run vertically in the outer half of the lateral field of the formatio reticularis, which may be considered as an intrinsic fibre system of the medulla (so far as they are not connected with the cerebellum, as will be seen later). A portion of the nucleus lateralis has also been destroyed by the lesion. The dorsal leaf of the left olive is injured to a very slight extent. Fibres passing from the left posterior columns, or their nuclei, into the corpus restiforme are also destroyed. Finally, there are degenerations of the ventral portion of the rhaphe, the nucleus arciformis, and the external arcuate fibres, which pass from the cerebellum through the corpus restiforme to this nucleus.

In addition to the study of these degenerated tracts and nuclei, the lesion affords an excellent opportunity for the demonstration of the course of the descending root of the vestibular nerve.

The clinical symptoms observed in this case, and which we shall endeavor to explain by the existence of the pathological conditions just mentioned, are briefly these: A man, fifty-three years old, without any known cause and with only the premonitory symptom of a slight numbness of the right leg, suddenly experiences the sensation of a lump in his throat accompanied by absolute inability to swallow and slight difficulty in speaking; at the same time he feels tingling in the left side of the face spontaneously and in the right arm and leg following slight friction; and this sensation is accompanied by absolute analgesia and thermic anæsthesia in the same areas, without a trace of tactile anæsthesia anywhere on the body. Similarly, smell and taste are not affected, but analgesia is present both on the left side of the tongue and in the left nostril. In addition to these symptoms there is extreme ataxia and complete loss of muscular sense in the left arm and left leg without any other motor disturbances. There is also increased secretion of sweat on the right side of face and the right hand. Two months later, coincident with an improvement in some of the symptoms above enumerated, he suffers from a second attack, manifesting itself in a sudden loss of strength, especially in his legs (a symptom which had not been marked in his first attack), and after this second attack his knee-jerks, previously normal, become greatly exaggerated, and ankle clonus, previously absent, becomes well marked. There takes place in the course of time a more or less complete recovery, as regards the power of deglutition and of muscular sense, and as regards the analgesia of the right arm and leg. The ataxia continues and is associated with an ever-increasing weakness, and finally with slight delirium and loss of mental power, and he dies about four years after his first attack.

In this case, then, we have a clear clinical history of two separate attacks of cerebral disease, the first causing purely sensory, the second purely motor, symptoms. It is therefore evident that all three foci of softening did not occur at the same time, but that the focus of softening in the medulla, causing sensory symptoms, occurred first, and that the focus of softening in the pons, causing motor symptoms, occurred two months later. There is nothing in the clinical history which enables us to assign any date to the focus of softening in the cerebellum, but, inasmuch as it lies quite close to the focus of softening in the medulla, it is not improbable that both regions are supplied by the same arterial trunk, the inferior posterior cerebellar artery. Wernicke * believes that foci of softening in the lateral field of the medulla are always due to occlusion of the arteriâ cerebelli posterior inferior. Duret † describes branches of the arteria cerebelli inferior posterior which are destined for the restiform body. Wallenburg ‡ has made a careful study of the distribution of the inferior posterior cerebellar artery, and as the result of his investigations concludes that when this artery is occluded a portion of the region to which it is distributed can be supplied by collateral circulation, but that the blood supply will be definitely cut off from the corpus restiforme, the direct cerebellar tract, the descending root of the fifth nerve, the motor nuclei of the pneumogastric, a portion of the hypoglossus nucleus, and a portion of the cerebellum. The softening would therefore not differ materially in extent from that found in the medulla and cerebellum in this case. This symptom complex, then, in this case (with the exception of the motor symptoms due to the pons lesion) can be referred with a considerable degree of certainty to a definite lesion—viz., occlusion of the left inferior posterior cerebellar artery.

Therefore, the results of the destruction of the corpus dentatum will be considered in connection with those of the medulla lesion, with which it is closely anatomically and physiologically related, for both lesions probably occurred at the same time. From this easily established difference in the date of occurrence of the different foci of softening, it is evident that we must seek to explain the earlier symptoms by the lesions in the medulla and cerebellum and the additional symptoms appearing later by the lesion in the pons.

Analgesia and Thermic Anæsthesia.—We may commence by a consideration of the symptom which showed the most persistence and the least change from the beginning to the end of the disease, the analgesia of the left side of the face. In our patient, as is very commonly the case, analgesia was associated with thermic anæsthesia. Therefore, to save useless repetition of words we will state at the outset that whatever statement is made in the following discussion with regard to the analgesia applies with equal force to the thermic anæsthesia.

In considering the cause of the analgesia present in our patient we have to deal with one of the most obscure domains of pathology. It is very remarkable that medical investigation has been able to learn so little in regard to the "mystery of pain"; a symptom which in the mind of the laity is almost synonymous with disease, and which physicians recognize as the most important protection that the body possesses against injury and against many forms of disease. The sensation, or rather the perception of pain, depends upon molecular activity in the cells of the cerebral cortex, and this is no more and no less obscure than are the other varieties of perception—visual, auditory, tactile, etc. The nervous impulses giving rise to painful sensations are conveyed to the cerebral cortex by the sensory nerve fibres and tracts, and there can be no doubt that the analgesia of the left side of the face, in our case, is due to the destruction by the focus of softening in the medulla of some portion of the sensory tract connecting the left side of the face with the cerebral cortex, and certainly we find that a portion of this tract—the descending root of the fifth nerve—is indeed included within the softened area (Fig. 11), and therein lies the cause of the analgesia of the face.

The discovery in the skin of distinct points peculiarly sensitive to thermic, painful, and tactile impressions respectively, makes it almost certain that these three distinct kinds of cutaneous sensation are conveyed by separate and distinct fibres in the peripheral nerves. Our case makes it certain that the fibres of the fifth nerve, after they have left the Gasserian ganglion (and by analogy the posterior spinal nerve roots), possess distinct functions, and that the fibres conveying impulses for thermic and painful perceptions are all collected together into the descending root of the fifth nerve; while all the fibres conveying impulses for tactile perceptions probably pass to the sensory trigeminal nucleus lying in the floor of the fourth ventricle (Fig. 11). It accords well with our physiological conceptions that the descending root, which has such a long course, is in such close proximity to many motor nuclei (especially to the nucleus of the facial nerve), and is evidently well fitted to convey impulses for reflex acts, should convey only painful and thermic impressions; stimuli which would naturally give rise to reflex acts, the purpose of which is to protect the body from injury. Finally, this case clearly demonstrates what has been long known, that the fumes of ammonia excite not the olfactory but the fifth nerve fibres in the nose.

This case then makes it very evident that the fibres of the fifth nerve, after leaving the Gasserian ganglion, have distinct functions, and that all those fibres which convey impulses for painful and thermic impressions, after entering the pons, turn downward * and lie in the descending root. These fibres terminate by very dense arborizations around the cells in the column of gray matter on the inner margin of the descending root (substantia gelatinosa trigemini). From the cells of this terminal gray matter new fibres arise, some of which run to and about motor cells (especially those in the facial nucleus), constituting reflex arcs; while others pass inward to the median rhaphe, whence, after crossing, they pass to the lemniscus—the general sensory tract—and reach through it their final termination in the cerebral cortex at a point (posterior central convolution?) upon which this case throws no light.

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* *Lehrbuch der Gehirnkrankheiten*, vol. ii, p. 227.

† *Archives de physiologie normale et pathologique*, 1873 and 1874.

‡ *Archiv für Psychiatrie und Nervenkrankheiten*, vol. xxvii, p. 539.

* Dr. Van Gieson follows Kölliker in stating that after the sensory trigeminal fibres enter the pons they divide into "Y's," both branches of which turn downward. Cayal (*Beitrag zum Studium der Medulla*

It seems probable from the experiments of Mott,* and from the pathological investigations of Bielschowsky † and Déjérine,‡ that these fibres are interrupted in their course by ganglion cells either in the optic thalamus or in its immediate neighborhood, or it may be, as appears from Jakob's # investigations, in the globus pallidus of the nucleus lenticularis. Jakob's hypothesis is very attractive. It is that the terminal central sensory neurons have a structure analogous to the primary (peripheral) sensory neurons. Cells in the globus pallidus, according to this hypothesis, send one process downward through the lemniscus to the nuclei of the posterior column in the medulla, and send one process upward through the posterior part of the internal capsule to the posterior central convolution.

The analgesia and thermic anæsthesia of the right arm, the right leg, and the right side of the body have a somewhat different causation from those of the left side of the face, in that they are due to a lesion of the secondary (central), not of the primary (peripheral) neurones. We have already learned that our case proves that, at any rate in the fifth nerve, impulses for pain and temperature perceptions pass along different peripheral neurons from those that impulses for tactile perceptions traverse, and we shall now learn that, similarly, these different impulses traverse different central neurons in their passage through the spinal cord, the medulla, the pons, and crura cerebri on their way to the cerebral cortex. In our case the peripheral spinal nerves and the spinal ganglia are entirely normal. Moreover, those fibres of the posterior nerve roots which pass upward in the posterior columns to their nuclei graciles and cuneati, which there arboresce with the dendrons of other cells, and which after this interruption cross in the sensory decussation and pass upward in the median lemniscus, conveying to the cerebral cortex impulses for tactile perceptions, are also, throughout their entire course, normal. From Plate I, Fig. 1, it can be seen that the nuclei graciles and cuneati and the sensory decussation are not injured by the medulla lesion. The medulla lesion in our case, however, causes the thermic anæsthesia and analgesia of the right arm and leg and of the right side of the body by interrupting in the medulla another sensory tract, the fibres of the column of Gowers—the antero-lateral ascending tract (Fig. 11). For some time past the belief has been growing stronger that these fibres of the column of Gowers convey only impulses for thermic and painful perceptions, and to this belief this case adds strong proof, for this is the only tract destroyed by the lesion which comes from the opposite side of the body and could therefore cause the thermic anæsthesia and analgesia of the *right* side.* The fibres of this tract of Gowers have the following course: Collaterals from fibres of the posterior spinal roots envelop the cells of the posterior horns, which send out axons across the anterior commissure to the opposite side of the spinal cord and, traversing the anterior and lateral columns to their periphery, turn upward to form the antero-(ventro-)lateral ascending tract (column of Gowers). Thus, the fibres of this tract cross the median plane of the spinal cord continuously at successive levels and not in a body, as do the fibres of the posterior columns in the sensory decussation. This tract is continued directly upward through the most lateral portion of the medulla in the formatio reticularis, and in the pons lies lateral to the lemniscus, just ventral to the upper olive (Fig. 10).

Dr. Van Gieson, not using Marchi's stain, was unable to trace these degenerated fibres farther than the middle of the pons, but a great deal of very interesting investigation in regard to the upward continuation of this tract has been made during the past few years. Loewenthal,† in 1885, traced in the dog Gowers's tract to the loop which it makes a slight distance above the entrance of the fifth nerve into the pons and inferred that the tract terminated in the cerebellum. Auerbach ‡ and Patrick # traced in the cat Gowers's tract into the vermis inferior. Mott,‖ as the result of a long series of experiments on monkeys, reaches the following conclusion in regard to the antero-lateral tract: "The fibres consist of two sets: (1) The ventral cerebellar, much the more numerous and situated most peripherally, which can be traced to the vermis, looping over the fifth nerve to reach the superior cerebellar peduncle, and then descending on its posterior aspect to the middle lobe of the cerebellum. (2) The crossed afferent tract of Gowers and Edinger (function unknown), which, in all probability, arises from cells of the gray matter, its fibres decussating in the

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oblongata, etc., Leipsic, 1896, p. 1), however, states that one branch turns downward and the other turns upward. The fibres which turn upward are much smaller than those which turn downward, according to Cayal. This difference in structure may possibly correspond to a difference in function.

[*] *Brain*, spring number, 1895.

[†] *Neurologisches Centralblatt*, 1895, p. 205.

[‡] *Compt. rend. de la Soc. de biol.*, April 6, 1895.

[#] *Neurologisches Centralblatt*, 1895, p. 308.

[*] Ciagluiski (*Neurologisches Centralblatt*, 1896, p. 773) offers no satisfactory proof for his hypothesis that the impulses for pain and temperature sensations pass through the spinal cord just posterior to the central canal.

[†] *Rev. méd. de la Suisse rom.*, 1885, pp. 511–533.

[‡] *Anatomischer Anzeiger*, 1890.

[#] *Journal of Nervous and Mental Disease*, 1896.

[‖] *Brain*, spring number, 1895, p. 18.

anterior commissure. These fibres occupy exactly the same position, but are much more numerous than the small tract which was observed after unilateral section of roots. They can be traced right up to the cord and the medulla in the pons Varolii, above this, lying to the outside of the lateral fillet, and terminating in the corpora quadrigemina, some few apparently extending to the optic thalamus. Ramón y Cajal has shown that fibres arise from cells at the base of the anterior horn, and decussate in the anterior commissure. It is, therefore, possible that these cells are the source of origin of these two ascending tracts."

Finally, in a very valuable communication, Hoche * shows that in the *human nervous system* Gowers's tract gives off numerous fibres to the anterior horns throughout the entire length of the spinal cord, and that the remnant of the tract is continued upward through the medulla and pons, in the upper portion of which it forms a loop, and running backward through the roof of the fourth ventricle terminates in the cerebellum.

We have already seen in the case of the peripheral neurones of the fifth nerve that the fibres which transmit pain impulses run in the long descending root, which is in close connection with many motor nerve nuclei and probably are concerned in reflex acts. From the result of Mott's and Hoche's investigations it seems probable that the secondary neurones for the transmission of pain impulses (Gowers's tract) are in close communication with the anterior horn (the corresponding fibres, if there are any, which do not cross in the cord but run to the anterior horn of the same side probably do not pass outside of the gray matter) for the purpose of reflex acts, and the bundle running to the cerebellum may be concerned in the same process; while the portion running to the corpora quadrigemina probably reach their final termination in the cerebral cortex by a third set of neurones.

The fact that the analgesia and thermic anæsthesia of the left side of the face were due to a lesion of a primary (peripheral) sensory neurone, while the analgesia and thermic anæsthesia of the right arm and leg were due to a lesion of a secondary (central) sensory neurone, makes a very great difference in regard to the prognosis. In consequence of the numerous branching processes of the cells of the posterior horns and of the branches given off also from their axons, it is possible that even when the impulse can no longer pass along these axons, it can still pass by some of these collateral branches, and thus reach the cerebral cortex by indirect channels, and the oftener these indirect channels are thus traversed by the impulse the easier such passage becomes. This seems actually to have very slowly taken place in our case, and two years after the accident sensibility to pain had almost completely returned in the right arm and leg, although the normal tracts for painful perceptions were still destroyed in their course through the medulla.

In the left side of the face, on the contrary, the analgesia was permanent. Here the lesion was in axons of the primary (peripheral) neurones, and there was no chance for the impulse to pass by collateral channels. Consequently the analgesia remained permanent. It is, perhaps, possible that the peripheral neurones of the uninjured upper part of the descending root (Fig. 11) may have undergone an extension in their peripheral distribution in the skin, or, what is more probable, may have become themselves more sensitive and thus caused the very slight return of painful sensibility in the face and tongue noted in the history. This return of painful sensibility, even after three years had elapsed, was, however, so very slight that it scarcely weakens the contrast in the permanence of the sensory paralysis due to a destructive lesion in a primary (peripheral) neurone and in the more transitory nature of that due to a destructive lesion in a secondary (central) neurone.

Retinal Analgesia.—The fact that at the time of his first examination the patient was able to look at the bright noonday sun with either eye without blinking strongly suggests that there was present a condition of retinal analgesia. This analgesia was not present at subsequent examinations, it was bilateral and not unilateral, as were the other sensory disturbances, and, furthermore, patients suffering from atrophy of the optic nerves, so far as I can learn, do not have any painful sensations when their eyes are exposed to bright lights; so that I can bring this retinal analgesia neither in connection with any possible distribution of filaments of the fifth nerve to the retina nor in connection with the lesion, but regard it as a functional (hysterical) analgesia due to the excitement attendant upon his nervous condition and upon his examination under strange surroundings.*

Tingling.—In connection with the analgesia we may consider another sensory symptom, very intimately associated with it, of which the pathology is very obscure. This symptom is the tingling present in the left side of the face spontaneously and in the right arm and leg upon gentle friction. This is evidently a symptom of irritation rather than of paralysis; consequently it is more marked in the early stage of the disease, although some form of paræsthesia in the left side of the face persisted up to the death of the patient. The spontaneous tingling in the left side of the face might be explained by irritation of the cells in the substantia gelatinosa trigemini from the focus of softening in the medulla, but why a gentle rubbing of the right arm or leg should cause a painful tingling in the part rubbed, while severe burns and pin-pricks cause merely tactile sensations, seems, with our present knowledge, inexplicable. Although no satisfactory explanation of this tingling can be given, it is of interest to note that it is associated with lesion of the tract for conduction of painful impressions and not with that for conduction of tactile impressions,* and further, that where the peripheral neurone of this tract is involved the tingling is spontaneous, but that where the central neurone is involved the tingling occurs only upon slight but widespread cutaneous stimulation.

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* *Archiv f. Psychiatrie u. Nervenkrankheiten*, Bd. xxviii, S. 510.

* I have now under observation a case of optic neuritis, probably due to cerebral tumor, in which the patient complains of an unpleasant sensation almost amounting to pain whenever his bed is turned so that he faces the window, although he is absolutely blind and states that he can not distinguish light from darkness except by the unpleasant sensation above mentioned.

Loss of Muscular Sense.—We may next consider another form of sensory paralysis present in this case—that is, the loss of muscular sense. There was complete loss of muscular sense in the left arm and leg unaccompanied by any other motor or sensory symptom except ataxia. This loss of muscular sense is on the same side of the body as is the lesion in the medulla, and is undoubtedly due to the interruption by the focus of softening of the fibres of the uncrossed direct cerebellar tract, or tract of Flechsig (Fig. 11). In addition to the column of Flechsig, which has long been considered as the great tract for the transmission of impulses for muscle sensations to the cerebellum and thence to the cerebrum, there is also to be seen in this case (Plate I, Fig. 1, "X") a small complement of fibres passing from the posterior columns to the cerebellum, which are probably also concerned in the transmission of impulses for muscle sensations. In our case these fibres never reach the cerebellum, for they are involved in the destruction of the inferior cerebellar peduncle higher up, and thus all possible means for the transmission of impulses from the muscles to the cerebellum are cut off.

In the case of the loss of muscular sense, as in that of the analgesia of the right arm and leg, the lesion involves the secondary or central neurones; the primary or peripheral neurones, consisting of the peripheral nerves, spinal ganglia, and posterior nerve roots, being normal. The affected neurones consist of the cells of Clarke's column, which lie at the base of the posterior horns of the spinal cord and about which collaterals from the posterior spinal roots arborese, and the axons of these cells, which run to the postero-lateral margin of the cord, where they turn upward and constitute the direct or dorso-lateral cerebellar tract (column of Flechsig). This tract runs up in the most lateral portion of the medulla, just dorsal to the column of Gowers, and passes uncrossed to the cerebellum through the corpus restiforme of the same side to the vermis. A portion passes to the cortex of the vermis superior uncrossed (uncrossed Monakow), and the other portion crosses in the median line to the vermis inferior. The tract of Flechsig is, therefore, an uncrossed tract, excepting a portion of its fibres at their termination. The axons of the neurones of this tract are interrupted in their course by the focus of softening in the medulla, and thus results the loss of muscular sense on the same side as the lesion—that is, in the muscles of the left arm and leg, in which the primary neurones of this system have their peripheral termination.

Just as we found was the case in analgesia due to lesion of central neurones, so here the loss of muscular sense due to lesion of central neurones is temporary and not permanent in character. In view of the many branches of the neurone, collateral channels can be established, and in our case, a month after the lesion had occurred, the muscular sense, at first completely lost, was restored. There is therefore a very essential difference as regards its permanence between the loss of muscular sense due to a lesion of the peripheral sensory neurones, as is the case in multiple neuritis and locomotor ataxia, and the loss of muscular sense due to a lesion of a central sensory neurone as in this case. And thus we have established in another sensory system the same difference which has already been beautifully exemplified in the analogous instance of permanent analgesia of the face due to lesion of the primary peripheral sensory neurones and transient analgesia of the arm and leg due to lesion of the secondary or central sensory neurones.

The existence of these more or less perfect collateral channels of communication through sensory neurones explains the long known but otherwise inexplicable clinical fact that a central lesion involving both the sensory and motor tracts causes a less extensive and less persistent sensory than motor paralysis. In such cases the sensory channels of communication are re-established by a sort of collateral circulation. This is not possible to anything like the same extent in the case of the uninterrupted and for the most part unbranching motor neurones. But even they, probably, give off branches near the peripheral termination of their axons, and this is probably a factor (though doubtless a much less important one than the multiple representation of the muscles in the motor nerve roots) in recovery from the paralysis caused by poliomyelitis anterior acuta.

To this transitory nature of the sensory paralyses occurring in cases of central lesion is due the difficulty of locating sensory tracts and centres. At the autopsy a destructive lesion of a sensory tract may be discovered, and yet, if the lesion is an old one, in consequence of transmission through collateral communications, the patient may not have presented any corresponding paralysis for years previous to his death.

Ataxia.—Another prominent and permanent symptom in the case is the ataxia of the left arm and left leg, in regard to which there are several possible explanations. This ataxia might be caused by the loss of muscular sense and thus be due to the same factor that produces the high degree of ataxia very commonly seen in locomotor ataxia. The fact that the ataxia was on the same side of the body as the loss of muscular sense, and had exactly the same extent and distribution, makes it seem very possible that the ataxia of the left arm and leg was due to the destruction of the direct cerebellar tract (tract of Flechsig) and that there was no ataxia of the face, because the direct sensory cerebellar root of the fifth nerve, the analogue of the tract of Flechsig, was not involved in the lesion. But the loss of muscular sense can not explain the ataxia in this case, at any rate not after the first month, for at the end of that time muscular sensibility had returned, while the ataxia, although slightly less than it had been, was still extreme. It is, perhaps, theoretically possible that impulses for muscular sensation might reach by collateral channels the cerebral cortex (parietal lobe) and yet not reach the co-ordinating centre in the cerebellum, and thus ataxia might result from lesion of the fibres normally conducting impulses for muscular co-ordination without there being any loss of muscular sensation. To make this clearer we may assume, merely for the purpose of illustration, that these collateral channels are in the posterior columns, which in this case have a direct communication through the lemniscus with the brain, but not with the cerebellum; for we have already seen (Plate I, Fig. 1) that the fibres running from the left posterior column and nuclei through the left corpus restiforme to the cerebellum are destroyed by the lesion, and therefore can not reach the co-ordinating centre, and ataxia will result.

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* Compare Krehl, *Grundriss der allgemeinen klinischen Pathologie*, Leipsic, 1893, p. 200.

Without denying that this may be a possible though not very probable explanation of the ataxia, yet such an hypothetical explanation is entirely unnecessary, for there is destroyed in this case a group of neurones which, as we shall presently see, must be essential for the production of muscular co-ordination. These neurons consist of cells which lie in the cortex of the cerebellum and of axons which form the descending cerebellar tract of Marchi (Fig. 11), and as, by the softening of the entire corpus restiforme, this system was entirely cut off from the spinal cord, collateral channels of transmission and restoration of function were alike impossible. Before, however, considering the effects of the destruction of these fibres in the production of ataxia let us eliminate all other possible causes of the ataxia.

The vertically running fibres in the lateral half of the left formatio reticularis, except those connected with the cerebellum, as we shall see later, have nothing to do with co-ordination of movements, so far as we know; while the fibres of the pons Varolii connecting the cerebellar cortex with the cerebral cortex, which probably in part consist of the continuation of the tract of Flechsig, and which may well be concerned in the function of muscular co-ordination, and some of which were doubtless injured by the pons lesion in this case, can not be the cause of the ataxia, because during the last of March and early part of April, 1889, there was no loss of muscular sensation and yet there was well-marked ataxia, although the pons lesion was not at that time in existence.

We are then, almost of necessity, driven to refer the ataxia in this case to the destruction of the descending cerebellar tract of Marchi. There have been a great deal of investigation and much difference of opinion in regard to this tract during the past few years, and the careful examination which Dr. Van Gieson has made of the lesions in this case adds a strong proof to the certainty of its existence. He finds that in consequence of the destruction of the left corpus dentatum there is a descending degeneration of a tract of fibres passing downward through the left corpus restiforme, in part to the stratum zonale of both of the greater olivary bodies and in part through the formatio reticularis and through the anterior and lateral columns on the left side of the spinal cord to the anterior horn of gray matter. Thus the observations of Marchi,* Held,† von Bechterew,‡ and others receive important clinical confirmation.

This subject has been investigated lately by Biedl,# who, from the study of numerous experimental sections of the corpus restiforme (inferior cerebellar peduncle), has reached the conclusion that from the cerebellum three systems of fibres pass in a centrifugal direction through the corpus restiforme to the medulla oblongata and spinal cord.

1. The first of these systems consists of fibres which divide into two bundles, one of which passes through the fibræ arcuatæ internæ dorsales, just ventral to the nuclei of the cranial nerves in the floor of the fourth ventricle, to the posterior longitudinal bundle of the same side and in small part to that of the opposite side. The other bundle passes through the fibræ arcuatæ internæ mediæ, just medial to the descending root of the fifth nerve, to the formatio reticularis, where they turn downward and gradually pass by radiating fibres to the posterior longitudinal bundle of the same side. These fibres run downward in the spinal cord mainly at the point of junction of the anterior with the lateral column (in the lumbar region entirely in the anterior column), and passing through the anterior horn are found as degenerated fibres in the anterior nerve roots. Similarly, from the posterior longitudinal bundle degenerated fibres pass to the motor cranial nerve roots, and Biedl considers that the posterior longitudinal bundle has the same function and relation to the cranial nerves as the antero-lateral column of the spinal cord has to the spinal nerves.

2. The second of these systems consists of fibres which pass through the fibræ arcuatæ externæ, just lateral to the descending root of the fifth nerve, and turn downward in the formatio reticularis just ventral to this root, and run downward in the spinal cord in the lateral column along with the fibres of the pyramidal tract. Thus, along with the fibres of the pyramidal (motor) tract in the lateral column of the spinal cord run centrifugal fibres, uncrossed, coming not from the brain but from the cerebellum.

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* *Rivista sperimentale di frenatria e di medicina legale*, 1891, xvii, iii.

† *Archiv für Anat. und Physiol.*, 1893, anat. Abth.

‡ *Neurologisches Centralblatt*, 1895, No. 21, p. 929.

# *Ibid.*, 1895, pp. 434, 493.

3. The third of these systems consists of fibres (fibræ cerebello-olivares) which pass through the fibræ arcuatæ internæ ventrales and, crossing in the median rhaphe, run to the greater olive of the opposite side, where they in part end and in part are continued between the olive and the anterior pyramid to the fibræ arcuatæ externæ anteriores. The existence of this tract of fibres receives clinical confirmation from the case of Cramer.*

The degenerations found in our case confirm to a great degree the results obtained by Biedl. Of course, those fibres which terminate in the olivary bodies can not be traced downward as degenerated fibres. It is, moreover, a question admitting as yet of no answer how far the results of these experiments on animals can be transferred to man. We must, however, regard the tract of Marchi as certainly existing, and as consisting of fibres conducting impulses for muscular co-ordination from the cerebellum and running downward in the spinal cord along with those fibres which convey impulses for voluntary motion from the cerebrum, and it is to the destruction of this tract of Marchi that the ataxia found in this case is due.

Fixed Attitude.—Another peculiar symptom present in the early stage of our case is also to be explained by the lesion of the left corpus restiforme—that is, the striking tendency of the left arm to involuntarily move into the plane of the body, and the almost irresistible tendency of the patient to fall over toward the left, and especially for the head to fall on the left shoulder, without the existence of any muscular weakness. The assumption of a fixed attitude, which, as I well remember, was only present during the first two or three weeks of the illness, seems to be analogous to the rotatory movements commonly seen as a temporary symptom when the cerebellar peduncles are cut in animals. Biedl † describes these rotatory symptoms as constantly occurring in his cases of experimental section of the left corpus restiforme, and it is to the destruction of this body that the existence of this symptom in the early stage of our case is doubtless due. Concerning the explanation of this symptom, we can advance nothing further than that it may be due to faulty information in regard to the position of the body, and that it may be, like the tingling, a symptom of sensory irritation.

Difficulty of Speech and Deglutition.—The almost complete inability to swallow and the great difficulty in articulation, together with the great difficulty in clearing the throat of phlegm, which were the first symptoms in this case, and which persisted, except for some improvement in the ability to swallow, up to the death of the patient, although perhaps in part ataxic, were mainly paralytic, and were doubtless due to the almost complete destruction of the left nucleus ambiguus—the motor nucleus of the glossopharyngeus and pneumogastric nerves; while the fasciculus solitarius and the sensory nuclei of these two nerves were not included in the area of softening. That these symptoms were not complete and permanent resulted from the fact that the left nucleus ambiguus was not entirely destroyed and that the right one was completely normal.

Increased Secretion of Sweat.—Finally, the patient suffered from a very decided increase in the secretion of sweat on the right side of his face and on the right hand. A bilateral dominant centre for the secretion of sweat is now generally recognized as existing in the medulla.* It is probable that this centre on the left side of the medulla was involved in the lesion and that the centre on the right side was consequently stimulated to excessive activity.

We have thus explained, as far as possible, the symptoms of the first stage of this illness by the lesions in the medulla and in the cerebellum.

Hemiplegia.—Two months after the first attack the patient suffered from a second one, which manifested itself in a slight loss of strength of the left hand (the grasp, as registered by the Mathieu dynamometer, falling from 140 to 100, while that of the right hand remained about 165), and in a greater loss of strength in both legs, associated with a decided increase in tendon reflexes in them over their former condition. The cause of these symptoms certainly lies in the focus of softening in the pons, which affects the dorsal groups of the pyramidal tract fibres throughout their entire breadth on the left side and throughout their inner half on the right side (Fig. 5). We know little or nothing in regard to the arrangement of the motor fibres in the pons. So far as this case goes it would seem to indicate that the leg fibres were the dorsal ones; certainly the fibres for the motor cranial nerves were not affected, whether because they run more anteriorly in the pons or because they run in the mesal extremity of the median lemniscus (Fig. 5), as Bechterew † supposes, can not be determined from the lesions present in this case. Bechterew terms this most mesal bundle of the median lemniscus the accessory lemniscus, and on embryological grounds, and from the fact that in brain lesions with paralysis of the facial and hypoglossal nerves the bundle in question undergoes descending degeneration, he believes that the bundle belongs to the pyramidal system and conveys fibres from the motor cortex to the lower cranial nerve nuclei. The bundle in question then lies entirely above and out of the reach of the mass of softening in the pons, and this is verified by the clinical history, which gives no notes of upward extension of the hemiplegia to the face or of any paresis of the motor cranial nerves, except the ptosis and ophthalmoplegic symptoms of the third nerve; but the third nerve nucleus lies considerably above the pons lesion, and the pyramidal tract has already given off its fibres to this nucleus before reaching the mass of pons softening, so that these symptoms can in no wise be ascribed to the pons lesion.

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* Ziegler's *Beiträge zur path. Anat. und allgem. Pathol.*, 1891, Bd. xi.

† *Neurologisches Centralblatt*, 1895, p. 439.

* Landois. *Lehrbuch der Physiologie des Menschen*, sixth edition, p. 807.

† Bechterew. *Die Leitungsbahnen im Gehirn und Rückenmark*, 1894, p. 151.

The pons lesion produced no other symptoms, and, although some of the fibres connecting the cerebral with the cerebellar cortex may have been involved, they did not increase nor alter the hemiataxia already existing, nor produce any other recognizable symptoms.

Delirium and Mental Failure.—The delirium, the loss of memory, the general mental deterioration, and, perhaps, the paroxysms of restlessness, which manifested themselves so decidedly toward the end of the patient's life, were, without much doubt, due to the chronic meningitis which was revealed at the autopsy by the opaque and thickened pia mater and by the slightly increased amount of the subarachnoid fluid. The atheromatous cerebral arteries were also an important factor in the causation of these mental symptoms.

Finally, there were a few symptoms present in the case which seem to have no connection with the lesions found at the autopsy. Thus, the transitory numbness of the right leg, which occurred nearly a year before his attack of cerebral softening, can not be explained by any lesion found, but must be regarded rather as due to atheromatous arteries supplying the leg. It is not probable that the true heterotopia in the right lumbar region of the spinal cord had anything to do with this numbness. It is impossible to explain the slight ptosis of the left eyelid by the lesion in either the medulla or pons, and it is probable that this was of older date. Unfortunately, the region of the nucleus of the third nerve could not be satisfactorily examined microscopically. The existence of a right-sided facial paralysis was always a matter of doubt, and was severe enough to cause inability to whistle only toward the end of life when the general muscular weakness had become extreme. The transitory double vision, although there was no decided paralysis of any of the recti muscles, must be brought in relationship with the inability of the patient to turn the right eyeball either inward or outward quite as far as he did the left.

Thus have been explained, as far as possible, almost all of the prominent symptoms present in this complicated case by the lesions found in the medulla, the cerebellum, and the pons; the permanent facial analgesia and thermic anæsthesia by the destruction of the descending root of the fifth nerve (see Fig. 11); the temporary hemianalgesia and hemitherm anæsthesia by the destruction of the ventro-lateral ascending tract (tract of Gowers); the temporary loss of muscular sense by the destruction of the direct cerebellar tract (tract of Flechsig); the ataxia, by the lesion of the corpus dentatum, and of the descending cerebellar tract of Marchi; the tendency of the left arm to move into the plane of the body and of the body to fall to the left side, by the lesion of the corpus restiforme, or of the inferior cerebellar peduncle; and the hemiplegia, or rather partial paraplegia, by the lesion of the pyramidal (motor) tracts.

Many of the horizontally and longitudinally running fibres in the lateral half of the formatio reticularis, which were destroyed by the medulla lesion, doubtless form a part of the descending cerebellar tract of Marchi, and with the third system of this tract, according to Marchi, are connected the fibræ arcuatæ externæ anteriores, which were found degenerated in this case. (These fibræ arcuatæ externæ anteriores, therefore, can not be, as has been supposed, fibres connecting the posterior columns or their nuclei through the sensory decussation with the cerebellum. If they were, they would not be degenerated, as they are, *below* the lesion.) All these fibres, then, form part of that great co-ordinating tract which we have already considered. Whatever symptoms may have been caused by other fibres or cells destroyed by the medulla lesion and not forming part of the various tracts already considered, and whatever symptoms may have been caused by the various fibre systems connecting the pons nuclei with the cerebral cortex, the cerebellum, and the formatio reticularis, which may have been injured in part by the pons lesion, these (probably little noticeable) symptoms were so covered over and masked by the complex of symptoms due to the other more extensive and important tracts injured by the lesions that they could not be, or at any rate were not, recognized.

Although, therefore, there remain obscure and unsolved problems in the case, it still possesses much interest as throwing clinical light and confirmation on some facts in the anatomy and physiology of the medulla and pons which had been acquired for the most part only by anatomical, embryological, and experimental research, more especially with reference to the descending cerebellar tract of Marchi and to the course of the descending branch of the vestibular nerve. Not the least interesting side of the case, it seems to me, is the clinical evidence that it gives in confirmation of our later anatomical ideas concerning the nervous system and of its essential element, the neurone, and of the collateral channels of transmission which the branching central neurones offer to the nervous impulse. The difference in the permanence of the sensory paralysis due to a lesion of a primary sensory neurone from that due to a lesion of a secondary sensory neurone has not, so far as I know, been previously proved, and is certainly of great importance in prognosis. Finally, the case appears to present a complex of symptoms which, when present, will justify the diagnosis of occlusion of the inferior posterior cerebellar artery.

The Death of M. Maisonneuve, the well-known French surgeon, is announced to have taken place early in April, in his native town of Nantes. According to the *British Medical Journal,* he was in his eighty-eighth year.

THE URINE IN EPILEPSY.

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It is proposed here to give a synopsis only of a study on the subject indicated in the title. The full details of the work, together with the analytical data of the several thousand analyses upon which these assumptions are based, will be included in the next bulletin soon to be published from the institution. The work was carried on at the Ohio Hospital for Epileptics at Gallipolis, Dr. Rutter, manager, and at his suggestion. Dr. Rutter pointed out to me the clinical evidences tending to show that the attacks of epilepsy in a vast majority of cases were preceded by digestive disturbances, and in these, poisonous bodies, ptomaines or toxalbumins, might be produced, either new bodies or the ordinary ones in larger amounts, which, when absorbed, would produce these specific effects. The theory of auto-intoxicants as causative of disease has been adopted by such writers as Flint, Herter and Smith, Albu, Rashford, Voisin, and Petit.

Our work covered the examination of the urine for these bodies and also for such quantitative variations in the normal constituents as might occur in the epileptic condition, since it has been stated by writers that there are such variations characteristic of this disease. The periods of examination, for the most part, covered a period of thirty days and twelve patients. We considered first, the specific gravity and the amount; second, urea; third, uric acid and its relation to urea; fourth, phosphates, both ethereal and alkaline, and their ratio to one another; fifth, sulphates, both preformed and ethereal, and the ratio of the latter to the total phosphates; sixth, indol.

As to quantity and specific gravity: In two cases it happened that on the days of the attacks the highest quantity of urine with the lowest specific gravity was passed, and on two other days of attacks the lowest quantity with the highest specific gravity was reached. In other cases neither limit was concurrent with the attack days, nor was there anything characteristic on days before or after the attack. Therefore, the epileptic attacks cause no variations in a definite direction in either the amount or specific gravity of urine voided.

The Phosphates.—The study of these salts presents some interest, since it is known that their quantity is profoundly influenced in various pathological conditions. Zulzer and others have found variations from the normal in cases of insanity, and they set up the general rule that in all cases of brain excitation produced by drugs or disease there is a decrease, and in cases of depression of the mental functions an increase of the urinary phosphates. De la Tourette, and also Mairet, find the phosphates decreased in hysteria and increased in epilepsy. Lepine and Jacquin find the same, and state further that in epilepsy the ratio between the alkaline and earthy phosphates is increased in favor of the former. We determined the amount of total phosphates, alkaline and earthy, and the ratio between the last two. It was noted, first, that the total quantities excreted fall below, in some instances considerably, the figures 3.1 to 3.5 grammes, given as the usual amount, but this is very largely, if not entirely, accounted for by the fact that these patients live largely on a vegetable diet, with only one daily allowance of meat. Taking the total P_2O_5 on days of attack, in comparison with the previous period, we have in nineteen cases an increase, sometimes quite large; in eighteen cases a decrease, but in six of these slight, and then mostly coming on when two or more attacks have followed in rapid succession; in seven cases the quantity remains the same. Taking the alkaline and earthy P_2O_5 and their ratio, it appeared that for the alkaline we get an increase in twenty-two cases and a decrease in fourteen, in three of these slight only, and the same quantity in two, with six not determined. For the earthy, there was found an increase in sixteen cases, a decrease in ten, and the same quantity in ten. From these data it is safe to conclude that the excretion of urinary phosphates is increased in the majority of cases of epilepsy, and that the ratio of the alkaline to the earthy is altered in favor of the former. Considering the intense muscular contractions which occur during an epileptic fit of even moderate intensity, we might explain the increase in total phosphates and the relative increase of the alkaline over the earthy found in this condition, as a parallel of what occurs during severe muscular exercise not of pathological origin.

Sulphuric Acid.—As is known, SO_3 occurs in the urine in two forms. In the one form, spoken of as the "preformed," we have the acid united with the inorganic basis. In the second, "ethereal" form, the SO_3 is united with organic bodies of the aromatic series, as phenol, indoxyl or indican, skatol, and so on, the sum of both forms, of course, making the total. With present physiological knowledge not much importance can be attached to the total quantity of SO_3, except that, in a general way, it indicates a greater or lesser metabolism of the albuminous bodies. More importance attaches to the ethereal, since these are taken as indicating the amount of putrefaction going on in the organism; and any increase, either absolute or relative, to the preformed, so that the ratio between the two would fall, means an increase of putrefaction. Of course, not all forms of putrefaction would indicate themselves by an increase of the ethereal sulphates, but only those changes in which there is a production of aromatic bodies mentioned. Other forms of putrefaction or fermentation may occur, in which other than these bodies are formed without an affinity for SO_3, and, consequently, no rise in the ethereal quantity. Herter and Smith (*New York Medical Journal*, 1892), in a careful work, come to the conclusion that in their cases of epilepsy an increase of putrefaction was shown, and they incline strongly to the opinion that therein lay the cause of attacks. It is to be regretted that the analyses given in most of their cases are so few that the variations which occur in the attack-free period are not at hand for comparison. This is especially true of their statements regarding indol. We took for our comparison the ratio of the ethereal to the total, that, it seems to me, being a clearer way to express any variations than to take the ratio between the preformed and ethereal. For nearly the whole period we find that in all cases the amount of total SO_3 remains more or less below the average normal, thus again showing the influence of a diet composed principally of vegetable foods. In the ethereal SO_3 there is also, for the most part, this same decrease below the normal, evidently due to the same cause. Taking next the amounts and ratios with reference to the attacks, it appeared that out of a total of forty-five days on which attacks occurred there was an increase on seventeen of these days, a decrease or the same amount on twenty-eight, or, what is more to the point, the ratio was below the average, showing, of course, a wrong balance in favor of ethereal on nineteen days only, whereas on thirty-one days the ratio was found better than normal. A further inspection of the tables would show that the ethereal SO_3 was increased absolutely and relatively above the normal on many other days, however, without producing or there being concurrent attacks. Taking the ratio between the two for all the cases during the periods, it was seen that in all but three of these cases for the greater time of the period the ethereal or putrefactively produced sulphates were decreased absolutely and relative to the total below the quantities found in ordinary health and with an ordinary diet richer in meat than that given to these cases. One case seems to me particularly instructive on this point. While the patient was free from attacks on two days only out of the thirty, on four days only was the quantity of the ethereal above the normal, and the ratio was altered in favor of the ethereal on only seven days of the period. Nor do the two free days show the best figures for these quantities. From this series, then, it does not appear that ordinary putrefactive processes, as measured by the ethereal or aromatic SO_3 produced, stand in any causal relation to epilepsy; in fact, there is no relation even between their quantity either absolute or in comparison with the ordinary sulphates and the number of attacks. This conclusion by no means, however, argues against the theory of autointoxication in epilepsy, for in estimating the above bodies we have, after all, an imperfect measure of putrefaction, and in such a complex of changes it is quite possible that putrefaction might go on in other directions without a decided increase of bodies united with SO_3, but with the production of different bodies still to be sought for. In fact, work along other lines now going on here strongly supports such an hypothesis.

Indol or Indican.—This substance occurs in the urine in the form of potassium sulphindoxylate—*i. e.*, an ethereal sulphate. It is easily recognized from the fact that with certain oxidizing agents it yields indigo blue. An increase of indol, or indican, as it is sometimes (though improperly) called, means an increase of certain putrefactive changes in the body, and in so far serves as a measure of such processes; but it is of less use in this regard than a determination of all the ethereal sulphates, since this indol helps to form only one of them. On account, however, of the frequency of its mention, it was thought best to make some observations in regard to the presence of this body in the epileptic urine. Before undertaking quantitative determinations preliminary tests were made, which showed the futility of pushing inquiry along this line. The urines from two hundred and twenty patients were examined on two successive days for each one, making a total of four hundred and forty examinations. A color reaction, distinctly but not intensely blue, was marked "moderate," and supposed to correspond with the intensity frequently found in normal urines examined at the time; the variations up or down were marked "good," "slight," or "absent," respectively. Of the four hundred and forty total examinations made, in a hundred and sixty-eight was the reaction above the assumed normal, and in two hundred and fifty-two below or absent. During the period there occurred sixty-four attacks; forty-one were synchronous with normal or subnormal indol quantity and twenty-three with an increased quantity. Comparing the quantity on days before and days after attack, it was found again that there was no regularity as to increase or decrease on these days compared with attack days. It must be remembered further that indol itself and its immediate derivatives are not very poisonous bodies, as shown by feeding experiments done by Baumann, Brieger, and others for the purpose of studying the variation in urinary indoxyl. Jaffe gave this substance hypodermically without toxic effects. Yet the fact remains that in a fair number of our cases and in a fair number of attacks there was an increase in the quantity of indol found.

Urea.—Less importance attaches to the quantity of urea *per se* than to its ratio with uric acid, although Kuehne and also Babow say that the urea is diminished after epileptic attacks, Babow finding this decrease after all forms of mental depression. The normal figure, thirty grammes a day, as is to be expected from the food of our patients, is rarely reached. As to its variations after attacks, we find that on days following seizures it was increased seventeen times, decreased twenty-one times, remained the same five times. This does not include one case where attacks were of daily occurrence.

Uric Acid.—This substance has been repeatedly invoked as the toxic agent causative of various pathological conditions. An ardent advocate of this view is Haig, who in the last edition of his work lays great stress on increase of uric acid as producing, among a variety of other diseases, epilepsy. Herter and Smith, in their work already referred to, consider this point, and say: "The general statement may safely be made that there is nothing distinctive about the uric-acid content just before a paroxysm, and the urines passed immediately after seizures have also shown nothing distinctive. In general it may be said that the urine passed after a seizure is apt to have a higher uric-acid ratio than the urine before or about the time of seizure, including that passed immediately after."

Haig objects to their results because the urine was not examined at sufficiently short intervals, and holds that the urines immediately before, during, and after the paroxysm should be examined. Haig does not attach importance to the absolute quantity of uric acid, but all stress is laid on the ratio which it sustains to urea. In his earlier writings he gave the normal ratio as one to thirty-three, but later he fixes it somewhat higher, at one to thirty-five, and rather thinks that it might properly be one to forty. With the exception of one, our own cases show a rather low uric-acid excretion. Comparing its quantitative variations with the attacks, we find it was higher on days preceding attacks sixteen times, lower fourteen times. On days succeeding attacks it was higher sixteen times, lower eleven times, five not determined. From these figures no law or relation with reference to uric acid and attacks can be deduced. Taking next the point upon which more stress is to be laid, the ratio between urea and uric acid, in which connection it will be borne in mind that a lower ratio means a relative increase of uric acid, and assuming one to thirty-three as a normal ratio, which certainly seems high enough, many writers taking as high a ratio as one to thirty, our tables show, leaving out again one case for the present, that out of thirty-two days on which attacks occurred the ratio was at the healthy figure or better all but once, and always much better on account of the meat-free diet than is found in most persons enjoying full health. In fact, in one case we had attacks on four successive days, and during this time the ratio was remarkably good, being as one to thirty-seven, fifty-three, forty, and thirty-eight. In one other case, it is true, the ratio was low as a rule, but on the two days free from attacks the ratio was as low as one to eighteen and one to twenty-nine; moreover, on ten days of the period in which he had attacks the ratio was normal or better. Considering the ratio on days before and after attacks, only five times out of thirty-two was this below normal, and taking one to thirty as the normal, only twice was this figure passed. From this it is evident, then, that uric acid and its relation to urea play no rôle in the causation of epileptic seizures. These results, while conforming to those of Herter and Smith, are directly opposed to the elaborate arguments of Haig. He, however, makes other statements in support of his conclusions which are not borne out by our experience here. He states that the attacks are preceded by a minus excretion of uric acid, as evidenced by feelings of well-being. Dr. Rutter is positive in his statement, that of the five hundred cases here nearly all have periods of depression, lasting sometimes a day or two, before attacks, and that the attacks are almost invariably followed by a state of brighter mentality. In a few cases only is there a preceding excitation of mind which may amount to acute mania. Haig's statement that there is no morbid anatomy in epilepsy certainly needs verification, a work we are now engaged in. His second statement, that attacks are periodical, also holds true for only a few cases; with most of our patients there is no marked regularity of time. Neither do the attacks occur mostly at the morning hour, as Haig says they do, because there is a normal increase of uric acid with the normal "alkaline tide." Next, we do not find that the attacks occur with greater frequency at the menstrual period, except again in a few cases. It is true that we notice frequently gastro-intestinal disturbances preceding and concurrent with attacks, but to regard these with Haig as an effect of uric acid is no more warranted than to regard them as the cause of attack. While recognizing the value of the urea-to-uric-acid ratio, I feel that some attention should be paid to the absolute quantity of uric acid present, since it is said that upon this substance, and therefore upon its absolute quantity, the symptoms depend. This follows from Haig's own statements, for he says that certain symptoms can invariably be produced by the administration of food, as meat, high in uric acid, or by taking of the acid itself. Considering, then, the uric-acid percentage of the urine which Haig must take as indicating the amount present in the blood, we find that this is frequently higher on days free from attack than on attack days, and that this percentage frequently exceeds that found in the few cases Haig gives in urines taken during and after attacks. His figures for during and after are: 0.06 per cent., 0.10, 0.13, 0.03, 0.05. Our own cases frequently reach these figures without a fit following, and, while Haig's objection that the figures were taken for the whole day and not for periods of it might come to mind here, still that would be the worse for us, since, if the total urine shows a high percentage, it could, if taken at intervals, have only possibly shown alterations of lower and, of necessity, of higher percentage, and yet no attacks during the period of percentage higher than those we actually give. If the urine must be taken at short intervals to get at this plus excretion of uric acid, the following reasoning is fair: Haig, in criticising Herter's work, says, page 205: "I also pointed out that when the urine of the fits was mixed with that before and after, the uric acid came out normal, while the urine secreted during the fits showed a great excess. It is quite useless to examine a hundred and fifty to five hundred cubic centimetres of urine when that excreted during and after could not possibly exceed twenty to thirty cubic centimetres."

This certainly means that the dangerous surplus of uric acid was washed out in the twenty to thirty cubic centimetres, but, assuming that it took one hundred cubic centimetres of urine to wash out excess, and calculating for the absolute quantity with Haig's quoted figures of percentages, we find that at one time 0.05 of a gramme, in another 0.10, in another 0.134, and another 0.05 uric acid produced these attacks. Now, it is well known that uric acid is not so poisonous as to produce such symptoms in these small quantities. In fact, our patients at most times carried such quantities in their blood without discomfort.

I gave to rabbits, subcutaneously, uric acid as sodium urate, therefore in its most soluble form, in doses of 0.05 and 0.10 grains per kilo, which for a man of average weight would be 3.75 and 7.5 grammes (fifty to a hundred grains), without producing any effects. In myself, and in a patient who volunteered for this purpose, 0.05 and 0.1 gramme were taken without producing any appreciable disturbances, although these quantities, added to that already in the blood, must have raised the percentage above that assumed as highly toxic by Haig. Haig does not believe that there is an overproduction of uric acid, but says that there is a retention at one time, during the acid period in the tissues; at another time, the alkaline period, a re-solution into the blood, when dire disaster follows. Now, in our patients the urine is always, from the vegetable food, only slightly acid, the blood having, therefore, a normal alkalinity and a good solvent power over uric acid, so that there could not be a retention in the tissues due to acidity at one time, and then later, on account of increased alkalinity, a re-solution and a flooding with uric acid.

Rachford, in a series of papers (*Medical News*, 1894–'96; *Medical Record*, 1895), finds that in cases of migraine the toxic factor is not uric acid, but paraxanthin, a closely allied body. This substance is highly poisonous and, after Rachford, has been found in larger quantities in the urine of persons suffering from migraine, migrainous epileptoid attacks, migrainous gastro-neuroses, and migrainous asthma; but, in two cases of epilepsy, one of *grand* and one of *petit mal*, he did not find this body. That we will eventually find in epilepsy an allied body, one of the uric acid or alloxan group, I firmly believe.

Toxicity of the Urine.—It was thought that the direct examination of the urine as to its toxicity might lead to some results, and we determined to get at it in two ways: one, by direct injection into the veins; the other, by treating the urine after some of the various methods proposed for the separation of alkaloids or ptomaines and leucomaines, and a testing of the bodies so obtained.

Griffiths (in *Comptes rendus*, 1892), by a very easy method, professes to have isolated from epileptic urine a leucomaine of which he gives the ultimate chemical analysis and the physiological effects in animals, which were tremors, evacuation, convulsions, and death. Albu finds similar bodies by this method, but says they are not always the same in the same disease, and it is not proved that they have specific results.

In our first experiments with Griffiths's method we obtained no definite results with the bodies separated. With the method modified somewhat and used on larger quantities (up to seven thousand cubic centimetres) of urines we obtained a minute quantity of substance which produced slight disturbances only in rabbits, guinea-pigs, or mice. Urine treated with benzoyl chloride, after Baumann, yielded a body which gave only negative results when injected into guinea-pigs.

Treatment of other urines with mercuric chloride and with ammonium sulphate also led to negative results. Three other urines, treated after the ether method, were tried on frogs with better results. The final product of these urines gave effect as follows: First urine, frog No. 1, received five minims; frog No. 2, eight minims, and frog No. 3, fifteen minims. Effects in No. 1, slight. In Nos. 2 and 3, ten minutes after injections, the following was noted: Frogs sink when thrown into water, have fibrillar twitchings, and opisthotonus; reflexes impaired; final recovery. From the second lot of urine similar effects were obtained in two frogs. The third lot was taken from a patient after a series of attacks, and after injection of twenty minims of the final solution on each of the two frogs, we noted as follows: Retardation of reflexes; stimulation of the toe occasionally causes reflex contraction of the *opposite* leg; will not swim or jump; general convulsions, lasting some seconds; slight pressure on foot causes three or four quick contractions, followed by tremor of toes, persisting for seconds; forty-five minutes after injection, death. It appears from the above, then, that by the methods we used and with quantities of urine in operation, no ptomaines could be obtained in amounts which affected rabbits and guinea-pigs, though the effects on frogs were well marked. Another way to test for toxic bodies is to inject the urine directly into the veins. From large numbers of observations by various authors it is safe to conclude that the amount of normal urine which can be borne by a rabbit in this way is forty-five cubic centimetres per kilo. Our own experience on this point covers a few trials only, fifteen in all. The urine passed after attacks was used in quantities varying from five cubic centimetres to thirty-five cubic centimetres per kilo rabbit. In eight cases the injection was followed by drowsiness lasting from about four hours to two days, with at first frequent micturition, tenesmus, dilatation of the veins, and labored breathing. In three cases the effects were more marked. One case was negative, and three cases had convulsions and died almost immediately after injection.

With one exception, the above results show, in support of the original proposition of auto-intoxication, that these epileptic urines were toxic above the normal, and in three cases decidedly so.

I am aware of the incompleteness of the work, so far as ptomaines are concerned, but my excuse for not delaying the publication until complete lies in the belief that it may be of use to others engaged in similar work.

I feel under obligations to Dr. C. B. Morrey and Dr. C. L. Spohr for the unselfish assistance which made this work possible.

DIARRHŒA AND BACTERIA.*

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I PROPOSE to speak of diarrhœa from a special point of view. It is well known that diarrhœa is a symptom of various diseases, which may be classified according to their respective ætiology. There is the diarrhœa superinduced by ulcer of the rectum, there is the diarrhœa caused by intussusception, and the diarrhœa the result of intestinal catarrh. Aside from these and others of a similar character there is a class of specific diseases which manifest themselves by diarrhœa, such as typhoid fever, cholera, and tuberculosis. It may be said, on the whole, that all of these, however much they may differ in their origin, are characterized by a similar pathological fact—namely, that there is a change in the mucous membrane of the intestine. It is true that there is a species of diarrhœa which differs from all others in the fact that it is attended by neither a pathological nor an anatomical change of the mucous membrane of the intestine. But this is to be regarded rather in the light of an exception, and we may say that the mucous membrane of the intestine plays a very important rôle in the normal process of digestion, and that a disturbance of the digestive process, such as diarrhœa is a symptom of, is coincident with certain conditions of the mucous membrane.

There are a number of reasons why the evacuations in diarrhœa are fluid. The food does not remain long in the jejunum or ileum, and consequently has little time for absorption. Then, again, the peristaltic action of the intestines may cause these unabsorbed substances to be rapidly carried out. Another reason why the movements are fluid may be due to the phenomenon of transudation, of which I do not care to speak here. Briefly, however, I may define it in this manner: watery constituents of the blood originating in the capillaries or in the glands force themselves out of the intestinal walls into the lumen. It is exceedingly important, however, to go beyond the well-known explanation of the various phenomena of diarrhœa. That the peristalsis is enhanced or reduced in the majority of diarrhœtic cases need not be stated. That a pathological change takes place in the mucous membrane of the intestine in most cases of diarrhœa, and that this phenomenon may itself either hurry or retard peristalsis, we know.

Rosenheim has shown that if catarrh is present in the large intestine, mucus is provable only through the microscope; that chronic catarrh of the small intestine never occurs alone; that catarrh of the large intestine produces constipation interrupted by irregular intervals of diarrhœa; that in chronic catarrh of the rectum, with or without disturbance of the large intestine, mucus appears in the fæces. From this we may conclude that the intensification of the peristalsis is not entirely dependent on mechanical influences. The pathological elevation or reduction of the motility of the intestines takes place when irritation and susceptibility either rise above or sink below the habitual degree, but this modification has its source often in other than mechanical conditions. Even the chemical is known to exert a similar influence. In infectious diseases, to be sure, we know certain toxic substances act both ways, producing diarrhœa or constipation.

Penzoldt has shown that the question of intoxication within the intestines during the process of assimilation of foods is very important. He has called attention to what he significantly calls auto-intoxication. Physiological material retained in the intestines, and the products of a physiological character resulting from overproduction of normal or abnormal materials, may produce conditions to which his felicitous use of the term may very fittingly apply.

Both retention and overproduction may constitute pathological phenomena, and by irritation of the nervous system, either through mechanical or chemical factors, may produce diarrhœa. This question of food toxines, suggested by the phenomenon of self-intoxication, opens up what seems to me a new territory for ætiological analysis of the symptom in question. An abnormal condition of the intestines seems to be coincident with the presence of bacteria and their toxines; the disappearance of the intoxication seems to be coincident with the removal from the intestines of the poisonous bodies. I must in all candor confess that that is all we can posit as yet.

Pasteur observed the presence of bacteria in the intestinal canal, and he maintained that they were essential for the maintenance of the person. We have come to see that this is an extreme view. More recent investigators have cautiously receded from it. But we can accept a fertile hint from this pioneer statement. If it is not the bacteria themselves whose presence in the intestinal canal is to be regarded, as Pasteur would have had us do, then we may take the word of Escherich, the latest of the investigators, who insists that at least with regard to the infant the bacteria are of more than subordinate significance. From both aspects it is obvious that bacterial activity is not without its traces in the symptom of diarrhœa.* Penzoldt even insists that it has a significant bearing on various serious conditions, such as eclampsia of children, vertigo, and the like, which he believes to be traceable to other causes than reflex action.

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* Read before the Northern Tri-State Medical Association, at Fort Wayne, Ind., January 19, 1897.

* Sternberg says: "Perhaps bacilli of the colon group and of the proteus group are more frequently than others responsible for gastro-intestinal troubles in children. They are widely distributed and multiply with rapidity, under favorable temperature and conditions, in milk or other articles of liquid food."

We know that micro-organisms have their habitat in the healthy body as much as in the diseased, and that the bacterial flora within the intestines have a physiological as well as a pathogenic significance greater than that in any other organs. The fermentative and putrefactive processes in the intestines have their inception largely in these; it remains only for developments in medical science to ascertain whether intestinal fermentation and putrefaction are due to the direct presence of micro-organisms or to the secondary effects of their products.

Rosenheim says that outside of the *Bacillus coli communis*, all other bacteria that have their habitat in the intestine, or that have been examined so far, have no special clinical significance. But he confesses that the subject has not been exhausted in any scientific way, and he mentions a number of names of such as are in the midst of these studies—*e. g.*, Nothnagel, Brieger, Escherich, Uffelmann, Baginsky, Bienstock, and others.

If we can not get at the very seat of bacteriological activity within the intestines, we can attain a high degree of probability with regard to their functions, for, since the discovery of the cholera vibrio by Koch, this has become comparatively easy. As Koch was the first, so Escherich is one of the latest who has given his attention to the bacteriological examination of the fæces. This latter has found in the case of milk fæces of an infant a very clear evidence that the bacterial flora are determined in the intestines by the food stuffs, and that with a varied diet a differentiation of the bacteria always appeared. This dependence of the bacteria upon the food, as evidenced in the fæces, shows that the gastric juice does not possess adequate capacity to destroy bacteria. Suckendorff went even so far as to prove this point by interesting experiments on his own person. There is no bacterial vegetation in the intestines which we can say originates there; we may maintain, in fact, that the kind of bacteria and their multiplication and diminution depend almost entirely on the kind and mass of food. And we may also maintain that the stomach is far from being an absolutely sterilizing organ. In view of this latter fact there is a likelihood that certain cases of diarrhœas have a microbic origin, for evidently the seat of microbic diarrhœas may be within the stomach itself, without the stomach being able to arrest the cause.

I may also add, returning to the subject of peristalsis, that this phenomenon which attends diarrhœa may find its explanation in the bacterial vegetation in the intestine. Billroth has gone so far as to maintain that there are more bacteria in the large intestine than in the small intestine. Escherich goes further: he says the food mass, after leaving the stomach, becomes very much thinned through the gall and intestinal juices and becomes correspondingly unfavorable to bacteria. Now this mass, he continues, remains in the small intestine but a short while, so that these germs are given little time for multiplication. In the large intestine, however, this food mass moves more slowly, the intestinal fluids seize hold of it with more deliberation, and the intestinal germs are afforded a better opportunity for relative multiplication. The number of bacteria begins to increase at the duodenum until they attain a great enormity at the cæcum. It is possible also that the quality of the bacteria in the small intestine differs from the quality of those in the large intestine. It would appear then as quite logical that the peristaltic action undergoes a corresponding modification, dependent upon the local reactions of the several sections of the intestinal tract.

I have said above that the stomach can not be regarded as an absolute sterilizer. I may add here that Riegel has proved that the stomach is not implicitly necessary for the digestion of albumin, and that the pancreatic juice can peptonize the albumin more energetically than the gastric juice. It was believed that the main function of the HCl did not lie in its capacity to digest albumin, but rather in its destructive effect on micro-organisms. Under normal conditions, it is true, free HCl does arrest fermentation up to a certain degree, but again it has been shown that HCl does not completely destroy the germs that have reached the stomach, and it has also been shown that fungi and great fermentation can exist together in the same stomach even if free HCl is also present, and that if HCl is entirely wanting, fermentation may still not take place. We are justified in deducing from these circumstances that in certain microbic cases of diarrhœa the proximate seat is in the stomach, which has allowed the micro-organisms to pass into the intestine unchallenged, and where they exist normally their multiplication is rapid. Minkowski has shown that in the gastric juice there can be present along with free HCl yeast and thread bacilli.

With regard to motility and peristalsis, we may say that where motility is reduced fermentation sets in, inasmuch as through the retarded action the bacteria have a longer opportunity to multiply; while good motility, which gives bacterial multiplication no chance, does not allow extensive fermentation.

Rosenheim says that intestinal mycosis plays a larger rôle than is supposed from our present state of knowledge, and he suspects a series of anomalies in the process of assimilation due to their presence. He also speaks of certain interesting pathological changes, due to bacterial causes, which he believes show that abnormal decomposition takes place in the intestines.

There is a great probability that the catarrh and other inflammations of the intestinal mucous membrane do not always originate from any specific or chronic cause. For it seems, in fact, as if the numerous bacteria of the intestine have the power to produce certain diseases under conditions not yet entirely defined. It seems also that one and the same species of bacteria can cause now a lighter and again a more aggravated condition of the intestine. A harmless bacterium, such as the *Bacillus coli communis,* people seem to endure without injury, while again it may be the cause of catarrh of the large intestine and of dysentery. The bacterial flora of the intestine seems to be diversified. The ætiological variety of intestinal diseases of a catarrhal and inflammatory character may at least have a partial explanation in this.

The functional disturbances of the intestinal wall, such as are indicated in atony or spasm, may find their cause in the presence of micro-organisms. Constipation may have its explanation in the spastic action of the intestinal wall and so may diarrhœa. Increased peristalsis, as well as arrested peristalsis, may have a similar explanation. I need not add, what may seem obvious, that the presence of either micro-organisms or their toxines must be held chargeable with these pathological phenomena.

Boas maintains that even in healthy condition the stomach contains yeast fungi, though in small numbers.* Nothnagel says in nearly every stool the yeast fungus occurs. In infantile diarrhœa it is sometimes found in astonishingly large numbers. Inasmuch as the gastric juice is not fully developed in infants, fungi can thrive, since fermentation is in no way arrested. A similar condition exists in atrophic catarrh of the stomach in adults. Fungi entering the stomach can freely multiply, and entering the intestine can establish niduses for further propagation and may be the proximate causes of diarrhœa.

The main condition in the development of bacteria in the intestine is the chemical character of its food contents. As that is, so there is a corresponding kind of fungous flora. The meconium, for instance, offers different conditions from those which milk fæces offer, and these again differ from those which meat fæces offer. Each respective kind of conditions determines the kind of bacteria present.

I shall mention a few of the most important bacteria that seem to have a bearing on the pathological condition of the intestines. Of these, the most prominent is *Bacillus coli communis.*

Bacillus coli communis. It occurs always in the fæces, and is present in the meconium as well as in milk and meat fæces. It has an anaerobic development upon a culture of glucose. Escherich has shown that the growth of this bacterium has no effect upon sugar of milk or casein. The acidulation of glucose is one of the essential marks of this bacterium. It does not feed upon the foods which are introduced, for under normal conditions these are not present any longer in the large intestine, but it feeds upon the secretions of the intestinal wall. Macfadyen and others say that they live upon the carbohydrates in the tract, and withdraw from the body a corresponding amount of these, and may therefore be regarded as a source of injury to the organism. The bacterium is ætiologically significant in cholecystitis, cholangeitis, dysentery, appendicitis, peritonitis, and diarrhœa. It may cause these affections either when its virulence is intensified or when it enters organs bordering on the intestines, and superinduces disease not only of the intestinal mucous membrane, but also of the neighboring organs. The fact that this bacillus acidulates glucose and coagulates milk, and acidulates alkali cultures, differentiates it from the typhoid bacillus, to which it otherwise bears a great resemblance.

Bacillus lactis aerogenes. Present in large numbers in the intestinal canal of such as feed on milk; less numerous in the fæces of the same (Escherich). Possesses proteolytic qualities in the same slight degree as the coli communis. Its most significant character, Escherich says, is its capacity to ferment quickly sugar of milk. No other intestinal bacterium has that power. It approximates the pneumobacillus of Friedlander in behavior and development. Manneberg believes that this bacillus does not play an important rôle in human pathology. Its physiological significance is greater, since it ferments sugar of milk without the presence of air. This is of great influence in the intestines of infants.

The *Schleier bacillus* (Escherich) resembles the two bacilli mentioned above as to its morphological character.

Bacillus subtilis, Ehrenberg. Nothnagel found it in the fæces. Boas found it in the stomach contents. It has no fermentative effect on carbohydrates, but it is intensely proteolytic; it is also aerobic. It can not multiply in the intestines if their contents are free from acids. Pathologically it seems inactive.

Bacillus enteriditis, Gaertner. Has been found in the meat of an enteritic cow and in the pancreas of the adult who had eaten of this meat; also in septic pneumonia of a newborn child.

Proteus vulgaris, Hauser. Found along with coli communis in dysentery. Baginsky found it in the evacuations of infants suffering from diarrhœa. It decomposes and putrefies albuminous bodies.

Bacillus putrificus coli, Bienstock. Also decomposes albumin, but more slowly under exclusion of air. Boas says it occurs frequently in the stomach contents.

Bacillus liquefaciens ilei. Decomposes meat with the odor of old cheese. Does not coagulate milk.

Bacillus butyricus, Prazmowski. Occurs sparsely in fæces in which amylous and vegetable remnants are absent. Boas has found it in the empty stomach. It is anaerobic; it ferments starch, dextrin, sugar, and lactic acid into butyric acid, carbonic acid, and water, but can not ferment sugar of milk into butyric acid. Its physiological and pathogenic significance must be great because of its specific fermentation.

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* Sternberg states that Baginsky in 1894 agrees with Fluegge in believing that the toxines produced by bacteria are the usual cause of summer diarrhœa in children. In this view he fully concurs, but cautiously adds that there is no reason to suppose that any particular micro-organism has a specific rôle in the ætiology of affections of this class.

Bacillus of green diarrhœa, Lesage. Lesage, experimenting on rabbits, has produced diarrhœa of a short duration by intravenous injections and by introduction into the stomach. In the intestinal canal lactic acid in moderate solution kills the bacillus.

Spirilla. Are not infrequently found in the contents of the intestines, though as yet they have not been cultivated.

Streptococcus coli gracilis, Escherich. Constantly present in the intestinal canal during meat foods. Absent in nursing children.

Streptococcus coli brevis. Frequent in milk fæces, also found in raw milk.

Streptococcus liquefaciens ilei. Forms inactive lactic acid from glucose.

Saccharomyces albicans. Cultured out of diarrhœtic stool and out of raw milk.

Micrococcus tetragenus. Wagner and Bollinger describe an intestinal mycosis in such as have died of typhoid affections. It is known to cause inflammations.

Actinomyces. At times found in the stool; may reach the intestine through the discharge of pus.

It will be seen from this incomplete list that even at this stage of intestinal bacteriology we are entitled to the hope that substantial service will be rendered by it in the diagnosis of diarrhœtic affections. It will require a precise distinction between the micro-organisms as well as something more than the mere laboratory work to which the subject seems as yet to be confined.

WHEN SHALL WE OPERATE FOR CHOLELITHIASIS?*

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THE elassical words of Billroth, "Medicine must become surgical," were never better illustrated than by the modern treatment of cholelithiasis. The celebrated master's demand is justifiable to a great extent; yet I should rather maintain that nowadays surgery must become internal; in other words, that only a good internist can do good surgery. The old saying, *Qui bene diagnoscit, bene medebitur,* was never more appropriate than at the present, and particularly to the question of the treatment of gallstones, which is entirely decided by diagnostic considerations.

The important point is that, while in the majority of cases the diagnosis of cholelithiasis is easy, there remain still a large number of cases in which it is extremely difficult, if not at times impossible. And even then, when the diagnosis is made, it is still *sub judice lis* which plan of treatment, whether medical or surgical, should be followed.

Fürbringer, the internist, says: "Still the results of the internists are not bad enough and those of the surgeons not good enough to justify the delivery of the domain of cholelithiasis to the surgeon. Only when, in spite of all hygienic, medicamentous, and balneological efforts, the patient becomes emaciated through the torments of the colics, when cholæmia and pyæmia are imminent, an operation should be performed." And Riedel, the surgeon, answers: "On the contrary, surgery should interfere at the beginning, not at the end of the tragedy, and should as a prophylactic remove the stones from the gall bladder before they have a chance to do their pernicious work. But what can one do against the custom sanctified by centuries? On the strong walls of Carlsbad every attack will be repelled, without a care whether through the delaying policy of Carlsbad thousands will succumb or not."

Which of the two procedures is really the better? The answer is difficult. Let us try to decide, in the first instance, from a consideration of the diagnostic difficulties.

When jaundice is present in a patient and when stones are found in the fæces, even the layman may diagnosticate gallstones. But frequently all the symptoms described in the text-books are wanting. Among sixteen cases I had under my observation jaundice was developed but twice, and then only shortly before operation.

Gallstones may be present in the gall bladder for many years without causing any symptoms, the autopsy only discovering them. Or a large stone may be in a normal gall bladder and the cystic duct be free. The stone being generally at rest, the cystic duct and the mucous membrane of the gall bladder being intact, there is no obstacle for the circulation of the bile, and a slight dragging only may be felt once in a while in the upper abdominal section. It may also be that under the same pathological conditions meteorismus and even vomiting may be caused. Or the whole annoyance may consist in slight temporary abdominal pain and the patient may not be able to digest all kinds of food, so that he naturally thinks he suffers from a "weak stomach." The patient may also be free from any trouble for many years, and only suffer from "stomach cramps," once in a while, and may die in old age from some other cause, the autopsy sometimes revealing the true nature of the stomach cramps. (Stomach cramps are with few exceptions nothing but gallstone colics.)

As the gall bladder in such cases is of normal size and of soft consistence, palpation will naturally fail to disclose anything. When adhesions should form the pain may be more frequent and a little more severe, but the local condition would remain just the same.

It is quite natural for such conditions to be confounded with ulcer of the stomach, old catarrh of the stomach, or abdominal neuralgia, not to speak of the rarer occurrence of adhesions caused by primary affections of stomach and intestines, displacements and version of the latter, syphilis of the liver, etc.

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* Read before the Section in General Surgery of the New York Academy of Medicine, March 8, 1897.

Or once in a while a stone may produce inflammatory processes in the gall bladder, thereby causing marked swelling of the more or less hydropic organ, intense pain, meteorism, and vomiting. The presence of a pear-shaped tumor under the liver would then elucidate the case, although jaundice might be entirely absent.

The swelling of the gall bladder, however, may disappear, meteorism having been present for a short period, and the patient will feel greatly relieved. At the same time, although no stone is found in the passage, there is a strong inclination to believe that the stone was driven out of the bladder, the disappearance of the pear-shaped tumor, which could distinctly be palpated before, corroborating the wrong assumption. But the latter symptom is due only to the subsidence of the inflammation, the stone remaining in its habitat just as before. Such cases are often confounded with the so-called benign forms of appendicitis, and the mistake is not at all unpardonable, as the appendix is not infrequently found up as high as above the level of the umbilicus. The same thing may occur in the case of ileus, floating kidney, cholangeitis, caused by acute processes in syphilis of the liver, primary formation of calculi in the liver itself, ulcer or cancer of the pylorus, cancer of the ascending or transverse colon, and suppurative processes in the kidneys.

Inflammation, caused by the irritation of the stone, may produce a swelling of the mucous membrane of the gall bladder which extends to the cystic duct and occludes the narrow canal. The mucous membrane of the gall bladder degenerates, the contents become decolorized, serum takes the place of the bile, and now we have to deal with the so-called hydrops. The size of the gall bladder may increase more and more, and at last the slight inflammatory process may extend over the neighboring organs under more or less pronounced symptoms.

Sometimes the patient has a hydropic gall bladder of the size of a man's fist, without ever having noticed the slightest trouble from it, and indeed without knowing it at all. Sometimes there are more serious symptoms present, which may be entirely misinterpreted.

CASE I.—Mrs. L., forty years of age, mother of three healthy children, had suffered for nine months from occasional pain in the umbilical as well as in the right lumbar region. The physician who was first consulted diagnosticated lumbago and treated the case accordingly. When another colleague discovered a resistance in the umbilical region, and felt a slight bulging there when the patient coughed, umbilical hernia was thought of. When the patient at last suffered from frequent nausea, pain after meals, and became cachectic, Dr. John Weber, of this city, diagnosticated cancer of the pylorus. Considering the locality of the tumor and the absence of pain in the region of the gall bladder, I felt justified in indorsing this diagnosis. Jaundice was never present. Exploratory laparotomy in the linea alba revealed a long, pear-shaped gall bladder of the size of a man's fist. The fundus of the tumor reached as far as an inch and a half below the umbilicus. Aspiration yielded serum. Adhesions had to be divided between the gall bladder and the omentum and transverse colon. The walls were so thick that they creaked under the knife. After their thorough division a stone of the size of a goose egg was discovered obstructing the cystic duct. The gall bladder was sewed to the abdominal wall. There was no reaction. Normal bile was discharged copiously twenty hours after the operation. Three months later, after having been repeatedly treated with Paquelin's cautery, the fistula was obliterated. Final recovery was perfect.

But just the same, and for reasons unknown to us, the mucous membrane, after being inflamed first, may become eroded and ulcerated; at last infection takes place, and the contents of the bladder become purulent, so that we then have to deal with the so-called empyema of the gall bladder. Sometimes a slow perforative process under the formation of an adhesive inflammation takes place, and gallstones are discharged into the intestine.

Such cases are easily confounded with grave appendicitis. The patient becoming cured by the perforation, and the fæces not being examined for biliary calculi, it wrongly appears to be another corroboration of the "benign character of appendicitis if treated properly."

Or the inflammatory process is recognized before perforation had a chance to take place, the symptoms being those of peritonitis in general. Then, if the gall bladder be deeply situated, appendicitis may be assumed.

CASE II.—Mrs. K., fifty-seven years of age, of Jersey City, the mother of two healthy children, suffered for years from weak stomach, and once in a while from slight pains in the epigastric region. Lately she had had much pain in the umbilical region, with great emaciation, and vomiting once in a while. Icterus had never been present. Chills and intense pain in the right iliac fossa developing during the last three days, appendicitis was diagnosticated, and I was sent for to operate. In the midst of a tympanitic area between the spina anterior superior ossis ilii and the umbilicus, I found a resistance that gave the indistinct impression of a tumor of the size of a goose's egg. Percussion above this area showed marked dullness, which dropped off indeterminably upward. Vomiting had been frequent. The patient's general condition was very poor, the exhaustion great, pulse 120, temperature 102°. My diagnosis was intestinal carcinoma, causing acute adhesive inflammation and perhaps perforation. Immediate laparotomy was advised. It was performed in St. Mark's Hospital, with the assistance of Dr. Lowenstein, of Jersey City. When the abdomen was opened empyema of the much elongated gall bladder was found. The fundus of the gall bladder reached as far down as to an inch below the level of the anterior superior spine of the ilium. Ninety-six stones, all faceted and of equal size, were removed, mostly by using an irrigator. The patient made a good recovery, the fistula closing eleven weeks after the operation. During four weeks after the operation altogether eleven stones passed through the abdominal opening. In this case I could manipulate and examine the gall bladder particularly well. I am absolutely sure that at the time of the operation no more gallstones were in the gall bladder.

Or a stone may be caught in the cystic duct, causing inflammation and subsequent ulceration. Virulent infection sets in rapidly, and, while the fate of the patient is sealed, still the clinical symptoms may be far from being vehement.

CASE III.—M. L., a man of forty-six years of age, had always been well until, two days ago, when he was taken suddenly with chills, nausea, vomiting, constipation, and meteorism. I was called by the attending physician to operate for intussusception. When I saw the patient first, at 4 P. M., he was walking about in his room. No signs of collapse, temperature 100°, pulse 104, respiration normal. No icterus. The abdomen was so much distended that palpation revealed nothing definite. But the patient complaining of violent pain in the region of the gall bladder, I felt justified in diagnosticating cholecystitis from impacted gallstones. Four hours later I performed laparotomy at St. Mark's Hospital. I found diffuse peritonitis. The gall bladder, which could be approached only under great technical difficulties, was nearly totally gangrenous, filled with malodorous pus, and containing five gallstones of the size of a pea. In the cystic duct a stone of the size of a bean was impacted. Extirpation of the gall bladder; iodoform gauze packing; abdominal wound partially left open. Death on the following forenoon from sepsis. In this case the clinical symptoms were in no proportion to the local condition.

In all the various forms described so far no icterus had ever been present. It is evident that the diagnosis is much easier when icterus appears. In such cases the inflammation of the gall bladder may be very intense, icterus developing rapidly and disappearing again as soon as the inflammation subsides. Or a stone incarcerated in the common duct may cause inflammation with all its consequences. In such cases Nature may effect a cure, the stone passing Vater's papilla. Or, again, infection may take place with empyema of the gall bladder; yet once in a while the stone passes at last, the pus also discharging into the duodenum. But the rule certainly is that the patient succumbs before the efforts of Nature are successful, while art would easily have saved the life.

CASE IV.—Mrs. P. D., thirty-one years of age, mother of three healthy children, had repeatedly suffered from slight digestive disturbances and colicky pains in the region of the gall bladder for the last three years. Four months ago she became feverish, lost appetite and flesh, vomited once in a while, and also had diarrhœa. Then the diagnosis of typhoid fever was made. Three weeks after the onset of the feverish condition the patient improved again, was free from pain for four weeks, until three days ago she was taken again with chills, vomiting, and pain in the right hypochondrium. During the last twenty-four hours development of icterus; at the same time pains of labor of the pregnant patient setting in. A child of five months was born twenty-four hours after the onset of the icterus. (The child lived thirty hours in an incubator.) When I first saw the patient, a few hours after delivery, in consultation with Dr. Louis Fischer and Dr. H. M. Groehl, there was great exhaustion: the pulse was 120, temperature 103°. Palpation revealed a tumor of the size of a goose's egg in the region of the gall bladder, which was very painful to the touch. Dr. Fischer had diagnosticated empyema of the gall bladder, caused by cholelithiasis, and had insisted upon an immediate operation.

Laparotomy, performed at St. Mark's Hospital, revealed adhesion of the gall bladder to the omentum. Although they were separated with extraordinary care, the gall bladder ruptured under my fingers, about a tablespoonful of thin, gray, malodorous pus escaping. Notwithstanding the gall bladder had been surrounded with sterile-gauze compresses, I was unable at the time to prevent some of the pus coming into contact with the omentum. The adjoining tissues were irrigated liberally with a hot salt solution, and iodoform powder was rubbed into the adjacent surfaces. No calculus was found. Cholecystostomy and partial iodoform-gauze drainage; removal of the gauze drain after twenty-four hours; uninterrupted recovery, and closure of the fistula three weeks after the operation. It seems to me that in this unusual case a gallstone had obstructed the common duct, had caused inflammation, infection, etc., and still passed into the duodenum, the condition of the gall bladder not being influenced by it.

A less fortunate case of a similar kind is the following:

CASE V.—A. R., thirty-six years of age, having suffered from digestive disturbances and colicky pains in the epigastric region, was treated by the various physicians he employed, mostly for dyspepsia, for several years. Four days ago he was taken suddenly with the symptoms of peritonitis. Dr. Waechter, who was called in then, advised an immediate operation, to which the relatives of the patient objected. Only when the condition became very desperate, the patient was sent to St. Mark's Hospital, where, on performing laparotomy, I found general peritonitis and a large abscess, the walls of which were formed by adhesions around the omentum, the transverse colon, and the perforated gall bladder. In the midst of the thin, malodorous pus a hundred and ten gallstones, all of the average size of a pea, were found. Death two days later from sepsis.

CASE VI.—M. C., twenty-six years old, the mother of four healthy children, has suffered for four years from occasional pain in the hypochondrium as well as in the epigastrium, which were regarded as "stomach cramps." During the last fifteen months she has had four attacks of a very severe character. She yelled and threw herself about in such a manner that hysteria was diagnosticated. The treatment was in accordance, although she insisted that her pain was located in the region of the gall bladder. The last attack being unusually severe and her actions becoming like those of a maniac, a neurologist was called in. On his examining the patient thoroughly, besides hyperæsthesia hysterica nothing abnormal could be detected. But on watching the fæces, the presence of a gallstone was discovered. Consequently medical treatment for cholelithiasis was instituted. Despite the administration of large doses of morphine it was impossible to check the pain, so that "as a last resort" surgical interference was proposed. When I had an opportunity to see the patient for the first time very slight icterus had just developed. The pulse and the temperature were normal. Vomiting and nausea were present. The abdomen was soft. At the classical spot a slight resistance but no tumor could be felt. There was hardly any pain to the touch. The urine showed traces of biliary coloring matter. The patient was greatly exhausted, and this probably had caused the subsidence of her "hysterical symptoms." On the following day cholecystostomy was performed at St. Mark's Hospital. After the walls of the slightly thickened gall bladder were divided, two hundred and eighty-six gallstones, varying in size from that of the head of a pin to that of a pea, were removed. No bile was present. Thinking that I had evacuated the gall bladder thoroughly, as, on introducing my finger into it, I could not find anything abnormal, I palpated the common duct from the outside and discovered a hard mass in the common duct. By pressing and pushing I succeeded in dislodging a soft gallstone of the size of a walnut into the gall bladder, from which I was able to extract it after many unsuccessful efforts. This large stone had apparently occluded the common duct only lately, thus explaining the incipient icterus. No reaction followed. Normal bile was discharged in twenty hours after the operation.

The various conditions described above may be confounded with all the different diseases of the liver, which may also produce jaundice, particularly with processes like suppurating gummata or echinococcus, liver abscess in the tropics, and pyæmia dependent upon appendicitis or hæmorrhoids. Furthermore might be considered perforating ulcer of the stomach, subphrenic abscess, inflammatory processes, and neoplasms in the pancreas and duodenum, etc.

It must also be borne in mind that a patient may suffer from any of these conditions described and at the same time his gall bladder may contain stones.

It had been expected that under anæsthesia the distinction could be made easier. But, unfortunately, the respiratory motions prevent exact palpation. Percussion is also quite uncertain, as the lower margin of the liver is generally so thin that tympanitic sounds are more or less audible through it.

It had been expected that the Röntgen rays would give some elucidation of these obscure points, but, unfortunately, gallstones are permeable to the rays, so that only an indistinct shade is obtained. Neusser, Goodspeed, and Cattell (*Medical News*, February 15, 1896) state that they have been able to diagnosticate the presence of gallstones by the rays. I have tried various experiments with the rays, but without being able to demonstrate the presence of gallstones, in two cases where the symptoms of their existence were well developed. We may hope, however, that future improvements of the Crookes's tubes will enable us to obtain more distinct skiagraphs.

So we see that the main diagnostic point is the pain. And even here it has to be considered that often the pain is not localized at the classical spot below the hypochondrium, but is very frequently confined to the epigastric and to the cardiac region. Even the right iliac fossa is painful sometimes, so that appendicitis is naturally looked for. It should also be borne in mind that the pain is frequently not of a colicky character.

Sometimes, when jaundice is absent, minute examination of the urine shows distinct bile-pigment reaction. In all of my non-icteric cases the urine was examined carefully, but gave no information. Fever is also a very unreliable symptom. As a rule there is no rise of temperature during the typical colics, while—at least in the beginning of the process—there is a decided elevation when ulceration and infection have taken place. Sometimes when the stones pass the common duct, a temperature of 105° has been observed shortly after, the thermometer registering 99°; and, *vice versa*, empyema of the gall bladder and ulceration are observed under normal temperatures.

This shows how difficult it is, in many instances, to diagnosticate cholelithiasis. But even when the diagnosis is made early, what then? The general therapeutic custom is to send patients who can afford it to Carlsbad, and to treat others with Carlsbad water or salt, with olive oil, with glycerin, with salicylate of sodium, etc. There can be no doubt that the alkaline-saline hot springs of Carlsbad induce peristalsis and stir up the circulation in the abdominal organs, particularly in the liver, where so often cholangeitis and cholecystitis are present as a consequence of cholelithiasis. Such inflammatory processes are often cured, at least the stones become quiescent, so to speak, and the cholelithiasis becomes, as Riedel says, "latent." This explains fully why such a great number of patients who have suffered intensely from "gallstone colics" feel well after using the water for a few days only. Copious defæcation is undoubtedly a great factor in this relief. Nothing illustrates this better than the fact that patients who, after long suffering, alleviated only by morphine, have determined to submit to an operation, change their minds suddenly as soon as the bowels are thoroughly evacuated. Their relief is then so great that they can not be persuaded that the operation is still indicated.

It is interesting to hear that Kocher, one of the most enthusiastic pioneers in the surgery of the gall bladder, said, when he suffered from cholelithiasis himself: "It is most surprising how a trifle of this water, taken during three weeks, effects as much as the stone-removing knife." Kocher suffered the most intense pains before going to Carlsbad, and since then he has never experienced any pain to speak of.

No stones, however, were passed, and so it must appear probable that we are confronted with a case of cholelithiasis which became latent after the inflammatory process had subsided. So it seems that the hygienic, medicinal, and balneological therapy cures the consequences of the stone—that is, the inflammation and the pain resulting from it. But a real cure of cholelithiasis is but seldom effected, the stones remaining where they were before. A perfect restoration to health would imply not only the subsidence of the symptoms described, but the entire removal of the stone or stones. It would furthermore mean the restoration of the bile-producing elements to a normal state, with no tendency to the formation of stones; and last, but not least, it would imply that the biliary system was entirely pervious. So we can readily see that after the diagnosis of cholelithiasis is made our strategy is by no means always determined. A series of questions still have to be answered; such as, in the first place, whether the pains are due to the passing of stones through the common duct or to cholecystitis. It seems that the latter is much more frequently responsible for the pains than is generally supposed. Furthermore, it must be considered that the pain persists even after all the stones have passed, the adhesions around the gall bladder being the only cause of them.

Only surgery can answer these questions properly, as the autopsy *in vivo* teaches the operating surgeon how often, before opening the abdominal cavity, he errs in his assumptions. From the experience gained by these errors the surgeon will learn how best to avoid them in the future.

The surgeon also learns by ocular demonstration that cholelithiasis is by no means the innocent disease which it is regarded as a rule. It may be latent for years, and may kill suddenly in the midst of apparent health. There may be several so-called colics followed by perfect euphoria; and, just as well, there may be a fatal result after the second attack. So the prognosis of cholelithiasis is always questionable. Innocent as it may be in the latent stage, when the stone is at rest and the bile passes freely, it will become terrifying as soon as the duct becomes occluded and infection takes place. It is thus a very misleading feature of cholelithiasis that the symptoms so often do not appear to be very serious, while intra-abdominally the gravest lesions are going on. And if the stone really passes the cystic duct, but not the papilla, the character of the reaction will be self-evident. While in such cases the stone, as already said, is discharged once in a while *per vias naturales,* in by far the greater majority of such cases the patients succumb, the true cause of death but seldom being elicited. The analogy with the various forms of appendicitis is obvious. In fact, if a patient gets a second attack of appendicitis he is almost sure to get a third and fourth one, and it will be only a matter of time when he will succumb to one of these attacks. The difficulty in deciding upon the proper treatment is also nearly the same. With slight modifications the same indications may be upheld for the treatment of cholelithiasis. In Case III the patient submitted to the operation at a comparatively early stage, and still it was too late, the pathological changes having become enormous and quite out of proportion to the clinical aspect of the case. There is not the slightest doubt in my mind that this patient would have been saved had the operation been performed early enough. But could a diagnosis be made at such an early stage? And if so, would it be possible to persuade the patient to submit to cholecystotomy at a period when as yet he was suffering but little?

On the one hand we see that cholelithiasis is an unusually frequent disease. In Germany, where autopsies are made much more frequently than in this country, gallstones are found in at least eight per cent. of all autopsy cases; some estimate even twelve per cent. According to a simple calculation, at least four millions of Germans suffer from cholelithiasis. Even admitting that such is really the case, we know that only a very small minority are apparently molested by the disease. It could hardly be demanded that even if the diagnosis of cholelithiasis is beyond doubt, we should insist upon the removal of the calculi if the patient is free from any trouble. And in the face of the most surprising results obtained at Carlsbad it is difficult to persuade the patient, even if he suffers.

On the other hand, the much-feared surgeon is just the one who knows that such apparent cures have to be taken *cum grano salis,* and that the underestimation of the significance of cholelithiasis will avenge itself some day. And it is not the infectious inflammation only, or perforation with its terrible consequences, which he dreads. Just as from an ulcer of the stomach carcinoma ventriculi often develops, or carcinoma of the kidney from nephrolithiasis, so the permanent irritation caused by the presence of the stones also often causes carcinoma of the gall bladder. Clinical experience shows that in fourteen per cent. of cases of cholelithiasis submitted to operation, carcinoma of the gall bladder is also found.

So we can not get over the fact that the presence of gallstones means a permanent Damocles's sword over the patient. The stones may remain latent for a long time and may suddenly destroy a life in the midst of apparent health; surgical interference then, and even at a comparatively early stage, coming too late. If, as Riedel says, an old sequestrum is situated in a bone focus, the administration of morphine and the application of fomentations will certainly alleviate the patient's suffering. But nobody will maintain that by such therapy the sequestrum is removed.

So, in summing up the *pros* and *cons,* it is not easy to arrive at a decisive understanding. Only the close co-operation of internal medicine and surgery can give a satisfactory answer to the very important question: To operate or not to operate? The internist who has often seen operations for gallstones or alleged gallstones witnesses how often the clinical manifestations have in no way indicated the immense intra-abdominal lesions, and will therefore be on his guard even in apparently mild cases. And *vice versa,* the surgeon who is not merely a dexterous professional cutter, but who possesses a great amount of general medical science, will in this gloomy fight not invariably appeal to his main weapon, the knife, but will by careful deliberation select those cases in which internal medicine should be given a thorough trial. The cases in which the internists show triumphantly a gallstone found among the fæces, after the surgeon had declared that only an immediate cholecystotomy could save the patient, will then be much rarer. Nor will the internist, in sight of the perforated gall bladder, be confronted with the fact that his Fabian policy has prevented the surgeon from saving a human life. He will also learn that cholecystotomy, done in a non-infected gall bladder, not only is a safe operation, but also will empty the gall bladder thoroughly and will give the tissue changes a chance to return to normal conditions. The presence of jaundice will not contraindicate an operation—it will only make it more dangerous on account of the cholæmic hæmorrhagic diathesis.

In summing up, I would therefore advise the operation as follows:

1. Whenever the diagnosis of acute cholecystitis is made, cholecystotomy should be performed without delay.
2. Cholecystotomy should also be performed in chronic hydrops of the gall bladder.
3. Whenever acute colicky attacks in the region of the gall bladder, combined with fever, return for a second or third time.
4. Whenever jaundice is present for more than four weeks.
5. In gallstone ileus.
6. In all obscure cases where inflammatory symptoms in the region of the gall bladder resembling peritonitis turn up, exploratory laparotomy is indicated.

In conclusion, I may say a few words about the technique of the operation. I am strongly in favor of cholecystostomy in view of the fact that, no matter how carefully the gall bladder may have been exposed at the time of the operation, still small stones are often retained. The reasons for this well-proved occurrence are not known (compare Case II). These stones are brought to light only if an opening is left in the gall bladder for a reasonable length of time; while if the bladder is sewed up (the so-called ideal cholecystotomy), subsequent manipulations are rendered impossible.

If there is any doubt whether a stone is left in the common duct the opening can be closed temporarily in order to see whether the passage is free or not. For this purpose the opening is tightly packed with iodoform gauze so that no bile can escape. After a little while the bile in the bladder accumulates and presses at last toward the place of least resistance. If there is a stone in the common duct, it will be driven into the duodenum. If the stone is too large, the gauze tampon will be driven out and the patient will become chilly. But if there is no stone, no accumulation of bile will take place, and this observation will then be of great diagnostic value.

Another reason in favor of forming an abdominal opening is that, after the stones are removed, a great deal of bloody secretion fills up and distends the bladder, thus not only causing intense pain to the patient if it can not flow out continually, but also giving rise to decomposition. We are not aware how infection is originated, nor do we know (if we exclude the cases of well-developed sepsis) whether the contents of the gall bladder are aseptic or not at the time of the operation. And there is no time then to wait for cultures. What we do know is that wherever there is stagnation the conditions for the development of microbes are extremely favorable, the omnipresent *Bacterium coli commune* probably being a main causative factor.

The incisions have been made in my cases alongside the inner margin of the rectus abdominis muscle, extending, as a rule, five inches downward from the costal arch. As soon as the gall bladder is exposed it is surrounded by sterile gauze compresses. The fluid contents are then aspirated, and the gall bladder is pulled out as far as it is possible and incised. Two ligatures are at once applied to the opposite margins to get a firm hold. Then it is generally easy to remove the stone or the stones; sometimes, however, it is necessary to detach the stone from the walls with a sharp spoon. The gall bladder must be well freed from adhesions to make the manipulations easy. It will then be less difficult to attach the margins of the gall bladder incision (serosa and muscularis) to the abdominal wall (peritonæum and fascia). Silk threads should be taken for that purpose, as catgut might yield too soon. If there should be any tension, the parietal peritonæum must be dissected back so far that it is entirely relieved. If the extent of the original incision should not suffice, a cross incision parallel to the arch of the ribs must be added.

Finally a rubber drain, surrounded by iodoform gauze, is introduced into the gall bladder. With two safety pins, arranged in the shape of a cross, the tube is then secured and connected with a long rubber hose leading into a bottle which stands at the bedside and which is filled with a strong bichloride solution. By thus draining off the bile, excessive soiling of the dressing, which consists of a thick layer of iodoform gauze and mossboard, is avoided.

If the stone is in the common duct, and can not be removed either by irrigation or by crushing it, by pushing it forward, or by the forceps, it must be approached by cysticotomy or choledochotomy, the latter being a very difficult operation and giving a high mortality (twenty-five per cent.). Resort should therefore be taken to choledochotomy only under the most pressing circumstances. If the common duct is obliterated, cysto-enterostomy has to be performed.

Extirpation of the gall bladder should be done if it is diffusely diseased, and if the cystic duct is entirely obliterated. Sometimes all these manipulations are made easier if the patient is turned on his right side as much as possible.

If the most minute aseptic precautions are taken, the mortality rate of simple cholecystostomy is very low. Hans Kehr, who reported two hundred and six laparotomies for cholelithiasis at the last congress of the German Surgical Society, did not lose a single patient in a hundred and twenty-six subsequent cholecystotomies. Such numbers speak loud in favor of early surgical interference, and it may safely be maintained that the dangers of the disease are greater than those of the operation. I have lost none of my patients in non-complicated cases.

It can thus be readily seen that the question, "When shall we operate for cholelithiasis?" is easier asked than answered. For the reasons discussed, the laity as well as the majority of physicians will not be in favor of the early operation, but will rather take the risk of the many serious complications for which, as we have seen, after much precious time has been wasted, surgical interference comes too late. There is also an unscientific aspect of the question, inasmuch as the patient frequently decides on the indications for the operation rather than the doctor. If he is wealthy, he will certainly go to Carlsbad, and only when his attacks become at last unbearable he may demand an operation. But in other cases it is too often the patient, and not the essential facts of the case—such as empyema of the gall bladder, the impending perforation, etc.—recognized by the physician, that decides for him the serious question, when to operate. The poor laborer or his wife, of course, can neither go to Carlsbad nor afford to risk many attacks, and therefore it takes but little to persuade them.

37 East Thirty-first Street.

A CASE OF
NASAL OBSTRUCTION IN THE NEWBORN.

By ELIZA H. ROOT, M. D.,
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In October last I was called to a case of labor, which was normal as to duration and severity; but the baby was asphyxiated, and with difficulty resuscitated. The child was well nourished, and no cause for the asphyxia was apparent. The mother stated that this was her fourth child, that her previous pregnancies were normal, and that the children, living with friends in a neighboring State, were all healthy. During her last pregnancy she had been obliged to work hard for the support of herself and children, her husband having deserted her early in her pregnancy. Otherwise the mother's history was negative.

After the baby was cared for I noticed its integument remained quite cyanosed, but nothing further was noted until my visit on the following day, when the mother informed me the baby could not take the breast.

On making an investigation I found the infant was not breathing through its nose at all, and when the mouth was closed upon the nipple respiration was entirely cut off. Swallowing from a spoon was nearly as difficult. I examined the pharynx and found the mucous membrane congested, there being little or no discharge of mucus and none of muco-pus from the naso-pharyngeal cavity or from the nares. In the effort to breathe, the uvula with the arches were drawn backward and the pillars of the fauces relaxed so as to almost close the pharynx, as if paralyzed. The true character of the nasal obstruction I failed to determine at this time. The child lived one week, taking what little nourishment it could from the spoon. It suffered from renal insufficiency with uric acid, and prior to its death there was a rise of temperature ranging from 100° to 101° F., but it had no convulsions or notable paralysis.

Post-mortem three or four hours after death: In the right nasal cavity the inferior and middle turbinated bodies were greatly enlarged and engorged with blood, resembling two rather small and well-filled leeches lying one above the other, completely occluding the nasal passage. The superior turbinated body appeared normal. In the left nasal cavity the turbinated bodies were congested, but not so enlarged as to occlude, of themselves, the nasal passage.

The brain: Over and following the fissure of Sylvius on the right side, the pia mater was deeply engorged, as were all the blood-vessels about the base of the brain; fluid lay in the fissure and at the base of the brain on the right side, while the cerebellar cavity on each side contained a considerable quantity of fluid.

Capillary engorgement was very considerable everywhere, except in the liver, which was pale and smaller than normal. The spleen was firm, dry, and darker than normal. The kidneys were congested, and some post-mortem (?) changes were observed in the stomach.

During life the engorgement of the enlarged turbinated bodies was necessarily greater than post mortem, and pushed the soft nasal sæptum against those of the left nasal cavity, thus effectually occluding both nasal passages. The rise of temperature was doubtless due to inanition. As to treatment, palliative measures were fruitless, while the value of surgical interference upon such highly vascular tissue in so young a child could only be known after trial. As to the cause of this condition of the nares I am wholly in the dark, and have, so far, been unable to find on record a similar case.

A CASE OF EMPYEMA WITH FOREIGN BODIES IN THE PLEURAL CAVITY.

PNEUMONIA—EMPYEMA—RESECTION OF RIBS—FOREIGN BODIES—FORCED INSPIRATION.

By LEEDOM SHARP, LL. B., M. D.,
PHILADELPHIA.

An interesting case of empyema came under my care, which is worthy of note on account of its complications.

F. C. H., aged thirty-eight years, an Irishman with a good family and general history, a driver by occupation, strong and robust.

Previous History.—On March 16, 1896, I attended him for the first time for pneumonia, treating him for some ten days. Some of his family becoming dissatisfied on account of his long illness and little improvement, called in their physician, upon which I withdrew from the case.* He was confined to his bed some six weeks before he was allowed to get up. At the end of the following week his affected side began to swell rapidly, giving him great pain and causing him marked dyspnœa.

On May 4th he was removed to one of the larger hospitals where, on the following day, he underwent paracentesis and was relieved of a "gallon of pus." While still confined to bed he missed a drainage-tube and drew the resident's attention to the fact. Being assured by his neighboring bedfellow that he had seen it swept up with the dressings, he dismissed the matter from his mind. He remained here until the 31st, being dressed every other day.

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* The subsequent history and the facts about the lost drainage-tubes he told me on February 6, 1897.

On the day of his discharge he was dressed and a drainage-tube inserted. He was told to return to the ward every other day. In the evening he missed the tube and returned at once to the hospital and reported it. The resident made an attempt to find it and failed; then dressed the wound and inserted another tube; this one he fastened with a safety pin. The patient continued in attendance at this hospital until July 5th.

On July 7th, for the sake of convenience, he went to a small hospital in his immediate neighborhood to be dressed; here he was treated until November 16th, and repeatedly told his attendants that he had missed a drainage-tube and believed it to have slipped in, yet no attempt was made to recover it.

On October 18th he consulted me and I made a careful examination of him. I found his condition as follows: A drainage-tube in his left side, with little or no pus, but a profuse serous discharge; the side was immovable; vocal fremitus absent; some distant yet indistinct breath sounds; percussion universally flat; temperature, 100.5°; pulse, 120; great dyspnœa and pain; no expectoration, but a hard, dry, and frequent cough; marked clubbed finger nails; a feeling of constriction around the lower thorax, and marked pallor and emaciation; weight, a hundred and twenty-five pounds, a loss of forty-five pounds.

An operation was recommended as the only possible cure. This he took under advisement, continuing to be dressed at the dispensary in his neighborhood.

On November 15th he again visited me, being very wretched, and I succeeded in getting his consent to an operation.

On the 16th he was admitted to the Medico-chirurgical Hospital, not having as yet mentioned the matter of the lost tubes.

On the 19th, Dr. Le Place, after an elaborate discourse to the students on the advantage of resection of ribs in empyema, operated on the patient, taking out a portion of three ribs, finding practically no pus, *two drainage-tubes* from six to eight inches long, a greatly retracted lung, and a pleura nearly an inch thick. This caused no little amusement to those present.

On the 27th he was discharged and told to return every other day. The wound healed nicely and the recovery was uneventful.

On December 15th he was turned over to me and I put him on the following *régime:* Tonics thrice daily; light calisthenics, with deep inhalations on rising and retiring; out-of-door exercise; and last, but not least, the blowing into a large bottle for ten minutes three or four times a day. This last expedient suggested itself to me from the fact that overdistention of the lungs is found in glassblowers and players on wind instruments. The result was highly satisfactory; the patient said he never failed to get relief and a sense of expansion on each trial, while the feeling of constriction almost immediately left him.

The patient was discharged well, January 14, 1897.

On February 6th his condition was as follows: He is now at work; he has gained thirty pounds in weight; temperature, pulse, and respirations are normal; some of the clubbed nails have disappeared while those remaining are fast fading; normal resonance and breath sounds are present, extending from two to three inches below the wound, which has completely healed.

The result of the case would indicate:

First. That some residents are grossly negligent.

Second. That Eslander's operation is a radical and at times a speedy cure.

Third. That forced inspiration is advantageous and advisable in expanding the lung tissue when relieved from pressure.

1335 Pine Street.

A SIMPLE METHOD OF PREPARING NUTRIENT AGAR-AGAR.

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The preparation of nutrient agar-agar is, at best, a very tiresome process. While at the present time there is no means at our disposal whereby the rapid solidification of the agar during its filtration can be prevented, still some plan of hastening its filtration seems to be feasible. In fact, it is not the tediousness of the process alone that deters the progressive general practitioner from preparing his own media. It is also the expense—as, for example, the possession of a hot-water filter, hot-air sterilizer, etc.—that is often taken into consideration.

With the object in view of surmounting to a great extent these difficulties, I would suggest the following simple method, employed by me for over a year with very satisfactory results:

Necessary Apparatus and Materials.—One glass litre measure; three flasks of one thousand cubic centimetres each; two glass funnels; test tubes; one rack for test tubes; one plain kitchen boiling pot; Swedish filter paper; one glass rod; beef extract; peptonum siccum; common salt; sodium bicarbonate, and agar-agar in powder.

Preparation of the Bouillon.—Dissolve ten grammes of beef extract in one thousand cubic centimetres of boiling water; pour the infusion into a flask and add ten grammes of peptonum siccum and five grammes of common salt. Close the flask by means of a tightly fitting cotton plug.

Sterilization.—Place the flask into the ordinary pot filled with boiling water up to one inch above the level of the mixture in the flask. (The flask will not tilt over if a wire, or piece of elastic with an aperture in the centre for the neck of the flask, is stretched from the handles at the top of the pot.) Heat the flask for three quarters of an hour over a free flame. Whenever the water in the pot goes down below the level of the mixture in the flask it must be replenished by boiling water which is kept ready for this purpose.

Filtration of the Bouillon.—Before beginning the filtration of the bouillon, if an alkaline medium is desired, sodium bicarbonate in solution is added in small quantities until neutralization or faint alkalinity is obtained (tested by litmus paper). A paper filter, folded in sixteen creases, is placed in the glass funnel in such a manner that its apex touches that of the funnel. Moisten the filter slowly, but thoroughly, with boiling water, and filter twice, each time using a new filter.

Preparation of the Agar Medium.—To the filtered bouillon add fifteen grammes of agar and disperse it widely over the surface to avoid the formation of lumps. Sterilize the agar mixture in the same way as the bouillon, shaking gently every fifteen minutes. Always observe that the water, which should reach above the level of the mixture, is at the boiling point.

Filtration of the Agar.—After heating for two hours over a free flame, filter the mixture through a thin but dense cloth (preferably linen), stirring gently with a glass rod. In this manner filtration progresses rapidly. Now place the filtered agar, contained in the flask, into the pot, and boil as before for about three quarters of an hour. Prepare two paper filters and adjust them in two separate funnels set in flasks. Pour the agar mixture slowly through the filters in a continuous stream, in order to keep up the temperature and liquidity of the medium. All the lumps and foreign substances of the agar which hasten its solidification having been retained in the cloth filter, the filtration through the paper filter is now comparatively easy. As soon as the fluid filters in drops, pour back the agar from both funnels (by piercing the filters) into the original flask and boil as before for about ten minutes. Repeat this process until all the agar has been filtered.

Sterilization of the Test Tubes.—If new tubes are used, thorough cleansing with water suffices, for they are anyhow sterilized afterward, together with the agar; but tubes that have previously been employed are boiled for an hour in the boiling pot and carefully cleansed afterward. The test tubes are filled about a third full with the agar mixture, and closed tightly with cotton plugs. They are then placed in a rack in the boiling pot containing boiling water up to the level of the agar in the tubes, and boiled for fifteen minutes each day, for three successive days. After the third sterilization, the agar tubes are allowed to solidify in a straight or slanting position as is desired.

The whole process is completed, as a rule, within four hours and a half, and requires no special apparatus, advantages which are of particular value to the general practitioner interested in the study of bacteriology. Indeed, it may be asserted that, if the processes pertaining to bacteriology were simplified, its study would no longer be confined to the laboratory of the bacteriologist alone.

One Hundred and Fiftieth Street and Eleventh Avenue.

Therapeutical Notes.

The Treatment of Excessive Sweating of the Hands and Feet.—In the *Wiener medizinische Blätter* for April 15th we find abstracts of two articles on this subject, more particularly hyperidrosis of the feet. In the first, by Noebe (*Medizinische Revue von Loewen; Journal de médecine de Paris*, 1895, No. 50), the author treats of four methods: 1. The wearing of such foot-gear as will favor evaporation of the perspiration, such as cloth shoes. 2. The use of chemical desiccants: *a*, alcohol with tannin, alum, and naphthol; *b*, salicylated talc (a mixture of salicylic acid, alum, and talc), salicylic acid with starch and tannin, powdered tartaric acid, and sulphur; *c*, a solution of chromic acid of the strength of from five to ten per cent.; *d*, a solution of iron chloride in glycerin. The so-called military sweat powder, he says, works much better if it contains as much as fifty per cent. of salicylic acid, with the addition of tannin, alum, etc. 3. The production of complete desquamation of the horny layer of the epidermis by maceration with diachylon plaster. 4. The employment of an anthidrotic solution containing twenty-five per cent. of hydrochloric acid. The feet may be immersed for ten minutes in undiluted commercial hydrochloric acid twice a week for from five to eight weeks, and then at longer intervals. After each application the feet, especially the spaces between the toes, should be washed with warm soap and water, and, if the acid has caused pain, a salve should be applied. With patients who are very sensitive, a twenty-five per cent. solution of the acid may be used at first, and the solution be gradually increased in strength until finally the crude acid is used undiluted. Equally good results are obtained with a ten-per-cent. solution of silver nitrate painted on the sole of the foot and on the interdigital spaces every morning until the horny layer is shed. This procedure, he says, gives better results than the employment of chromic acid, and is free from the dangers of that substance.

The other article is by Adler (*Prager medicinische Wochenschrift*, 1896, No. 39), who distinguishes two classes of remedies—those that act as absorbents and those that diminish secretion. In the first class, the dusting-powders are chief; but they have to be used every day, and so they soon get to be unpleasant. Moreover, they become caked with the secretion and make walking painful. Among the remedies of the second class, the author has found none better than the formalin solution of the shops. When it has been used for two or three days, a sort of scurf forms and the secretion suddenly subsides. The effect lasts for two or three weeks, according to the severity of the trouble and the thoroughness of the applications. Any fissures that may exist must first be healed; otherwise the formalin will cause severe burning. Care must be taken also that the fumes are not inhaled, as they are highly irritating. When the hands are affected, only weak solutions should be applied to them.

[If any of our readers think of trying the hydrochloric-acid treatment, we should recommend great caution as to the strength of the solution employed; it would certainly be risky, we think, to begin with the use of the undiluted acid. Possibly the author has in mind something milder than what we know in this country as crude hydrochloric acid.]

A Pill for Hectic Sweating.—The *Province médicale* for April 17th attributes the following formula to Heim:

℞ Quinine sulphate................	25 grains;
Powdered digitalis..............	12 “
Powdered ipecac................	6 “
Powdered opium................	7 “
Extract of licorice..............	a sufficiency.

M. Divide into thirty pills. From one to three pills to be taken daily.

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THE RESPONSIBILITY FOR THE ABUSE OF MEDICAL CHARITY.

There is a very significant leading article in the *Lancet* for April 24th—one from which it may readily be seen that the condition of things in England is about the same as it is here. In each of the two countries the rendering of gratuitous medical services to persons who are quite capable of paying for them has grown to be an enormous burden on the profession. The *Lancet* argues that the responsibility for the evil rests upon the profession at large, and states that general practitioners themselves are often parties to hospital abuse. For one reason or another, says our London contemporary, they send to hospitals, and often to particular members of hospital staffs, persons whom they know to be capable of paying fees.

"When," says the *Lancet,* "the question comes to be investigated further this statement will be borne out, and the members of the medical staffs will be able to show that in cases of abuse they are often acting on the suggestions of private practitioners. It is in vain for general practitioners to complain of hospital abuse if they themselves are parties to it. . . . We content ourselves here with saying that both consultants and general practitioners are to blame, and that they will be wise to confer with each other on the subject rather than indulge in mutual accusations. . . . For the sake of their common interests, as well as the interests of the public, both sections of the profession should consult together for the remedy of this grave abuse of charity."

No doubt our contemporary is right in laying a part of the responsibility on the general practitioners, but in this country, we feel sure, their share of it is exceedingly small. Here the chief onus rests upon the specialists—we mean, of course, in so far as it rests upon the profession at all. Not all specialists are offenders in this matter, and perhaps none of them are willfully. It seems to us that a plan that would go far toward overcoming the trouble might be founded on an understanding between the specialists and the general practitioners to the effect that, in the event of a consultation or the application of measures beyond the family physician's means being desired in the case of a patient for whom it would be a great hardship to pay the consultant or the specialist his customary fee, he should consent to take a reduced fee, reduced in accordance with a suggestion from the patient's own physician. This, of course, is done now, and always has been to some extent, but not enough. There are still many men of eminence in the profession who seem to think it beneath them to accept small fees from the poor; they prefer to treat them gratuitously in charitable institutions. This mistaken notion is not by any means secondary in importance to that other millstone on the neck of the profession, the greed for "clinical material."

If the bill to regulate dispensary relief in the city of New York, which has now passed both houses of the State legislature, becomes a law, it remains to be seen how much relief it will afford. Everything will depend on how it is executed. We can not say that we expect for a great deal of benefit from it, but it is worth trying. Meantime, let the profession, on which the final responsibility rests, do its part.

BUCHNER *VERSUS* KOCH.

There seems to be a dramatic aspect to the exploitation of Koch's "new tuberculin." Dr. R. Romme calls attention to it in the *Presse médicale* for April 21st. In the *Münchener medicinische Wochenschrift* for March 23d Professor Hans Buchner, of the Munich Hygienic Institute, published an article entitled Die Bedeutung der activen löslichen Zellproducte für den Chemismus der Zelle, in which he mentioned the researches of his brother, Professor Eduard Buchner, of the University of Tübingen, who found that by triturating the cells of beer yeast with sand and expressing the mixture under a pressure of from four to five hundred atmospheres he obtained a yellow liquid, clear or slightly opalescent, devoid of cellular elements, and having the remarkable property of inducing the alcoholic fermentation. From this fact Hans Buchner concluded that the agent of the alcoholic fermentation was not the beer cell itself, but a substance contained in its plasma, a zymase. This was in support of his theory of alexins. He added that some of his pupils, by means of a similar mechanical process of trituration, had extracted from the *Bacillus pyocyaneus,* from cholera spirilla, and from tubercle bacilli a liquid which seemed to have immunizing properties, but that the investigations were not yet finished.

Three days after the date of the Munich journal in which Buchner's article appeared, the telegraph announced Koch's discovery to the world, and in a few days more, on April 1st, Koch's article on his "new tuberculin" appeared in the *Deutsche medicinische Wochenschrift*, but the article was dated November 14, 1896. Thereupon, in an editorial note in its issue for April 6th, the *Münchener medicinische Wochenschrift* called attention to the identity of Buchner's and Koch's processes and to the almost simultaneous publication of their articles. It asked if the appearance of Koch's article, a week later than that of Buchner's, had not been managed for the purpose of making it impossible for Buchner to set up a claim of priority, especially as Koch's article was dated back in November.

In a communication entitled Zu Robert Koch's Mittheilung über neue Tuberculinpräparate, published in the *Berliner klinische Wochenschrift* for April 12th, Buchner hints at plagiarism on the part of Koch, and says that in 1893 his brother Eduard proposed to the house of Meister, Lucius, & Bruning to take out a patent for his trituration process of extracting the active principle from yeast. He says, further, that the application for the patent was denied, but not until the description of the process had remained open in the patent office for several months; that the description was finally published by Eduard Buchner, in January, 1897, in the *Reports of the German Clinical Society;* and that in that article Eduard said that Hans was at the time employing the same process for extracting the juice from pathogenic bacteria. Hence, Hans Buchner contends, Koch can not claim priority over him.

MINOR PARAGRAPHS.

A SERUM TREATMENT OF MEASLES.

WEISBECKER (*Zeitschrift für klinische Medicin*, xxx, 3, 4; *Centralblatt für innere Medicin*, April 17, 1897) has experimented with the serum of persons convalescent after measles. In a case in which he injected it before the rash came out there was a decided modification of the course of the disease, and favorable effects were apparent in four cases of morbillous pneumonia. Three of the children were between nine and fifteen months old.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 4, 1897:

DISEASES.	Week ending April 27.		Week ending May 4.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	2	3	4	2
Scarlet fever	176	10	237	6
Cerebro-spinal meningitis	6	6	6	4
Measles	216	3	266	7
Diphtheria	299	31	273	34
Croup	11	4	10	4
Tuberculosis	198	112	170	120

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general:

Small-pox—United States.

Brooklyn, N. Y.	April 24–May 1	1 case.	
Blissfield, t'p, Mich.	April 24	Small-pox reported.	
New York, N. Y.	March 1–31		2 deaths.
" "	April 24–May 1		4 "
Pensacola, Fla.	April 17–24	3 cases of varioloid.	

Small-pox—Foreign.

Bergen, Holland	March 31–April 7	2 cases.	
Cardenas, Cuba	March 10–17	60 "	10 deaths.
Corunna, Spain	April 3–10		1 death.
Edinburgh, Scotland	April 10–17		1 "
Liverpool, England	April 3–10	1 case.	
Madras, India	March 20–26		5 deaths.
Madrid, Spain	April 7–14		5 "
Matanzas, Cuba	April 7–21		10 "
Moscow, Russia	April 3–10	1 "	
Odessa, Russia	April 3–10	8 cases,	3 "
Paris, France	April 10–17		1 death.
Pernambuco, Brazil	Jan. 31–Feb. 27		42 deaths.
Rio de Janeiro, Brazil	March 13–April 3	1 case.	
Rome, Italy	Feb. 20–27		1 death.
Sagua la Grande, Cuba	March 26–April 2	7 cases.	
St. Petersburg, Russia	April 3–10	7 "	2 deaths.
Swansea, Wales	Jan. 2–March 27	1 case.	
Trieste, Austria	April 3–10	1 "	1 death.
Zurich, Switzerland	April 3–10	1 "	

Cholera.

Madras, India	March 20–26		2 deaths.

Yellow Fever.

Para, Brazil	April 3–10		3 deaths.
Rio de Janeiro, Brazil	March 13–April 3	67 cases,	27 "
Sagua la Grande, Cuba	March 26–April 10	29 "	2 "

The Gross Statue.—On Wednesday, May 5th, an heroic statue of the late Professor Samuel D. Gross, of Philadelphia, was unveiled in Washington on the grounds of the Smithsonian Institution. Gross's fame was much more than local—indeed, it was world-wide. It was fitting, therefore, that the memorial should be set up in the national capital, and that in the dedicatory exercises the Alumni of the Jefferson Medical College should be assisted by the American Surgical Association. Philadelphians do not need a material reminder of the great surgeon, although their city seems entitled to such a work of art as the statue of him that now stands in Washington. For the loss of it they may console themselves with the reflection that in its present situation it will come to be looked upon by many distinguished representatives of foreign governments who see little of our country beyond the immediate neighborhood of Washington.

Ethics in Atlanta.—Some little worry has no doubt been occasioned in many a reader of the newspapers by a recent press report to the effect that charges of unethical conduct had been brought against a number of Atlanta physicians before a medical society. The acts complained of were alleged to have been mainly coquetting with the newspapers in the interest of the fame of the accused. The latest dispatches, it is a relief to see, are to the effect that the charges have been withdrawn, having been found to rest on erroneous information. It is to be hoped that any rancor they may have engendered will speedily subside.

The Late Dr. Clark Wright.—The West End Medical Society, at its regular meeting of May 1, 1897, adopted the following resolutions:

We, the members of the West End Medical Society, have learned with regret of the death from pneumonia, on March 16, 1897, of our late fellow-member and associate, Dr. Clark Wright.

As a physician, he was endowed with high scholarly attainments, a thorough knowledge of his profession, and a kind and sympathetic nature. As a friend, he was endeared to all who knew him by his genial and happy manner and by his readiness to extend a helping hand.

Be it *resolved*, that this expression of our regret and appreciation of our loss be entered on the minutes, and that a copy thereof be sent to his family and that it be published in the medical journals of this city.

[Signed.] Alexander H. Travis, M. D., } *Committee.*
F. Spencer Halsey, M. D., }

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Surgery, on Tuesday evening, the 4th inst., the following papers were to be read: The Diagnosis of Tumors, by Dr. Congdon; A Study of Absorption of Ligatures, by Dr. L. A. Hendee; and Sudden Loss of Sight, by Dr. Clemensha. Cases and specimens were to be presented by Dr. H. E. Hayd, Dr. Grover Wende, Dr. E. A. Smith, and Dr. C. P. Smith.

The German Hospital.—Dr. Otto G. T. Kiliani has been elected a surgeon to the hospital.

The Society of Medical Jurisprudence.—At the next meeting, on Monday evening, May 10th, Mr. Cephas Brainerd will read a paper entitled A Glimpse at a Professional Duty.

The St. Louis Medical Society.—At the last regular meeting, on Saturday evening, the 1st inst., Dr. W. N. Beggs was to read a paper entitled Denver and Pulmonary Tuberculosis.

Changes of Address.—Dr. Francke H. Bosworth, to No. 41 Park Avenue, New York; Dr. Charles N. Cox, to No. 257 Jefferson Avenue, Brooklyn; Dr. Arthur B. Duel, to No. 14 West Thirty-second Street, New York; Dr. W. Freudenthal, to No. 1003 Madison Avenue, New York; Dr. Robert B. Talbot, to No. 51 West Sixty-eighth Street, New York; Dr. Ervin A. Tucker, to No. 110 West Fifty-seventh Street, New York; Dr. George G. Van Schaick, to No. 23 West Thirty-seventh Street, New York.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Two Weeks ending May 1, 1897:*

Lewis, D. O., Surgeon. Ordered to Annapolis as a member of the medical examining board, May 17th.

Brodrick, R. G., Assistant Surgeon. Ordered to examination for promotion, May 3d.

Cabell, A. G., Surgeon. Ordered to the U. S. Steamer Monongahela, May 15th.

Cook, F. C., Assistant Surgeon. Detached from the U. S. Steamer Vermont, May 8th, and ordered to the U. S. Steamer Wilmington, May 10th.

Morgan, D. H., Surgeon. Detached from the Naval Academy and ordered to the U. S. Steamer Monongahela, May 15th.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Fifteen Days ending April 30, 1897:*

Rosenau, N. J., Passed Assistant Surgeon. Granted leave of absence for three days. April 21, 1897.

Society Meetings for the Coming Week:

Monday, *May 10th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private).

Tuesday, *May 11th:* Arkansas Medical Society (Little Rock); Tennessee State Medical Society (first day—Nashville); Washington State Medical Society (first day—Spokane); New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Albany (annual), Delaware (annual), Greene (annual—Cairo), Onondaga (annual—Syracuse), Rensselaer, Seneca (annual), and Steuben (annual), N. Y.; Newark (private) and Trenton, N. J., County Medical Associations; Camden (annual—Camden), Morris (annual), and Sussex (annual), N. J., County Medical Societies; Norfolk, Massachusetts, District Medical Society (Hyde Park—election); Franklin, Vermont, Medical Association (annual); Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Philadelphia Pædiatric Society; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

Wednesday, *May 12th:* New Mexico Medical Society (first day—Albuquerque); Kansas Medical Society (first day—Topeka); Tennessee State Medical Society (second day); Washington State Medical Society (second day); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Societies of the Counties of Albany and Allegany (annual), N. Y.; Society of the Alumni of the City Hospital; Doctors' Club of the City of New York; Pittsfield, Massachusetts, Medical Association (private); Franklin (annual—Greenfield), Hampshire (annual — Northampton), and Worcester (annual — Worcester), Massachusetts, District Medical Societies; Philadelphia County Medical Society.

Thursday, *May 13th:* Michigan State Medical Society (first day—Grand Rapids); New Mexico Medical Society (second day); Kansas Medical Society (second day); Tennessee State Medical Society (third day); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga (annual), N. Y.; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

Friday, *May 14th:* Michigan State Medical Society (second day); Kansas Medical Society (third day); Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; College of Physicians of Philadelphia (Section in General Surgery); Northern Medical Association of Philadelphia; Medical Society of Saratoga Springs, N. Y.; Medical Society of the Town of Saugerties, N. Y.

Answers to Correspondents:

No. 459.—The house is that of Meister, Lucius, & Brüning, Höchst am Main. We know of no American source of supply. We mentioned the sources of our information in the article you refer to.

No. 460.—In Surgeon-General Sternberg's *Manual of Bacteriology.* See also Flügge's *Die Mikroorganismen.*

Births, Marriages, and Deaths.

Married.

Brinkerhoff—Hayes.—In Newark, N. J., on Wednesday, April 28th, Dr. Henry H. Brinkerhoff, of Jersey City, and Miss Ella A. Hayes.

Caire—Beauvais.—In New Orleans, on Tuesday, April 27th, Dr. Nemours Sebastian Caire and Miss Celeste Marie Beauvais.

Codman—Chadwick.—In Boston, on Thursday, April 29th, Mr. Julian Codman and Miss Nora Chadwick, daughter of Dr. James R. Chadwick.

McCourt—Ackerman.—In New York, on Thursday, April 29th, Dr. Peter J. McCourt and Miss Lotta G. Ackerman.

Mears—Holmes.—In Laurens, South Carolina, on Thursday, April 22d, Mr. Louis Henry Mears and Miss Mary P. Holmes, daughter of Dr. Henry M. Holmes.

Taft—Neal.—In New York, on Wednesday, April 28th, Dr. Robert McLean Taft and Miss Ida Vrooman Neal.

Ward—Corning.—In Albany, on Thursday, April 29th, Dr. Samuel B. Ward and Mrs. Erastus Corning.

Died.

DOWNING.—In Manchester, New Hampshire, on Thursday, April 29th, Dr. C. W. Downing.

GREEN.—In Easton, Pennsylvania, on Thursday, April 29th, Dr. Traill Green, in the eighty-fourth year of his age.

KITTRELL.—In Blackhawk, Mississippi, on Saturday, April 24th, Dr. B. F. Kittrell.

NICKERSON. — In Central Falls, Rhode Island, on Wednesday, April 28th, Dr. Asa H. Nickerson, of Pawtucket, Rhode Island, in the forty-second year of his age.

STRUBLE.—In Middletown, N. Y., on Friday, April 30th, Dr. Hugh McDonald Struble, in the forty-fifth year of his age.

Letters to the Editor.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

PHILADELPHIA, *May 3, 1897.*

To the Editor of the New York Medical Journal:

SIR: There still seems to be some misunderstanding as to the proper means of becoming a member of the American Medical Association. The subjoined extracts from the rules show that each person who means to attend should come armed by a certificate of membership in his State or county society. No persons presenting themselves for registration can be registered if they have not such a certificate. H. A. HARE, M. D.

[EXTRACTS FROM THE RULES.]

"The delegates shall receive their appointment from permanently organized State medical societies, and such county and district medical societies as are recognized by representation in their respective State societies, and from the medical departments of the army and navy and the Marine-Hospital Service of the United States.

"Each State, county, and district medical society entitled to representation shall have the privilege of sending to the association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number. Provided, however, that the number of delegates for any particular State, Territory, county, city, or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the code of ethics of the association."

Members by Application.—"Members by application shall consist of such members of the State, county, and district medical societies entitled to representation in this association as shall make application in writing to the treasurer, and accompany said application with a certificate of good standing, signed by the president and secretary of the society of which they are members, and the amount of the annual subscription fee, five dollars. They shall have their names upon the roll and have all the rights and privileges accorded to permanent members, and shall retain their membership upon the same terms."

Book Notices.

The Menopause and its Disorders. With Chapters on Menstruation. By A. D. LEITH NAPIER, M. D., F. R. C. S. Ed., M. R. C. P. Lond., F. R. S. Ed., Senior Surgeon, and Surgeon in Charge of Gynæcological Cases, etc. London: The Scientific Press, Limited, 1897. Pp. xv–298. [Price, 7*s.* 6*d.*]

THE relation between menstruation and the menopause has induced the author to devote a very considerable portion of his book to the former subject, perhaps an unduly large portion, as the book is specifically a treatise upon the menopause. As to the latter, he states that his work has been along original lines and that he has given a fuller account of the subject than has been attempted by any other author for many years. Various well-known authors upon this subject are cited and their works referred to from time to time.

The fallacies of statistics are apparent to him, and he proposes to avoid their extensive use, contrary to the custom of his predecessors, a proposition meriting high approval.

Ancient ideas and opinions, quaint and curious some of them, concerning menstruation are narrated, and then those of more recent times. Various theories of menstruation are discussed, the nerve theories of Johnstone, Martin, and others being approved provisionally, since their sufficiency has not been settled beyond dispute.

The custom of laying great stress upon illness at the menopause as a necessary part of that condition, when it is merely incidental, is very properly objected to. In the opinion of the author the cessation of menstruation is caused by atrophy of glandular structure throughout the body—that is, by physiological decay, or in certain cases by morbid conditions, structural changes with loss of nerve influence resulting. This definition is a fairly good one, but not comprehensive enough, and that is the trouble with other writers who have tried to formulate one, with Hegar, and Scanzoni, and Frank.

We agree with the author in his belief that the manifold symptoms of the menopause, in so far as they are really related to it, are mostly transitory, and that Tilt and many others who have raised up spectres and bugaboos in their tales and statistics concerning this condition should henceforth be allowed to rest quietly in oblivion, for their statements seem like figments of the imagination when compared with the experience of the average physician in connection with this subject.

Much attention is given by the author to the treatment of this condition. If it is so largely a functional trouble, and this we believe to be the case, we do not quite appreciate the need of the great number of drugs with which he provides his patients. Certainly iron and arsenic are good and useful in this connection, the former especially, for the many cases in which anæmia is so prominent a symptom. The hygienic rules are also excellent, though equally appropriate to any other period and condition of life.

The hæmorrhages of the menopause, as the author most truthfully says, are not normal and to be expected; let that error be discarded henceforth forever. They may be associated with congestion of the liver or other vascular disturbance or with disease of the pelvic organs, but they always mean disease and the necessity of careful investigation. Usually they indicate surgical treatment rather than the use of drugs.

The mental disturbances of the menopause form an important feature which has received appropriate consideration. It might have been well to deal more specifically with the insanity which often seems so closely related to the menopause. The old idea that fibroids of the uterus were harmless, especially after the menopause, is combated, and correctly. Probably few of them are harmless, and many more than was formerly believed give trouble when the menopause might otherwise be expected—that is, the latter is indefinitely deferred. The call for surgical treatment in such cases is an urgent one.

In the author's view of the reciprocal relationship of cancer and the menopause, so common and so ancient, we do not coincide. True, more cancers of the uterus and of the breast occur during the decade when the menopause is to be expected than in any other. But is it *propter hoc?* We think not. Is it not rather because the period of active formation is over, and that of degenerative changes has been ushered in? The menopause is merely incidental. At the similar period of life in men, somewhat later than in women, a like tendency to malignancy is noteworthy, even if not to the same degree, and there is no question of menopause or anything analogous to it.

Much of the author's discussion of the pathology of various conditions (*e. g.*, fibromata, carcinomata, and cystomata of the ovaries), while interesting and important, is irrelevant to his subject; there is also a certain desultoriness of treatment. But the very great labor and research which have been devoted to the work are apparent. It is scholarly and comprehensive, and its sifting of old errors upon most important subjects is very useful. It has failed to record what seems to us of the highest importance—namely, the influence of the surgical induction of the menopause. No work of this character is complete without such reference, and the material which relates to it is daily increasing in variety and abundance.

A System of Practical Medicine. By American Authors. Edited by ALFRED LEE LOOMIS, M. D., LL. D., Late Professor of Pathology and Practical Medicine in the New York University, and WILLIAM GILMAN THOMPSON, M. D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University, etc. Volume I. Infectious Diseases. Illustrated. New York and Philadelphia: Lea Brothers & Co., 1897. Pp. 5 to 985. [Price, $5.]

IT may with justice be said that there has of late been no dearth of able and systematic treatises on the practice of medicine; indeed, there has seldom been a time when so many have been produced in a rather limited period. That the urgent necessity for a given work is not apparent does not, however, inevitably militate against that work, and there is certainly always a welcome and a field for a system of medicine, provided it is of the right kind. No doubt is likely to enter the mind as to the quality of this production, in view of the eminence of its editors and the position occupied by the greater number of its contributors, but, even so, one is scarcely prepared for the thoroughness and exhaustiveness of treatment which characterize the work. It thus comes about that the new system is a literary acquisition of exceeding value.

Minutely to describe or to criticise this work within reasonable limits is scarcely possible, but the characteristics of this first volume which have impressed us with particular force are the completeness with which the subjects are discussed, a completeness, be it noted, however, utterly divorced from inconsequentials; the excellent arrangement of the subject matter, a trait whose absence does more to wreck books otherwise good than any other quality, we think; and its dogmatism, which, in view of the status of its contributors, is a quality to be prized, since it represents not assumption, but authority.

Treating as the volume does of infectious diseases, it is not important to detail seriatim the subjects considered, since they differ in no wise from those of other complete treatises. The chapter upon malaria is the one which has particularly aroused our admiration; in fact, we do not remember ever to have seen in one work a presentation of the subject so able. That the subject occupies about a hundred and forty pages of the volume is in itself no proof of its quality is, of course, true, but, taken in connection with the names of its authors, it is evidence most convincing and exceeded only by the positive proof which a reading affords. Yellow fever, too, is discussed in a chapter of remarkable value; so also is diphtheria. These subjects we cite not as contrasting to the disadvantage of other chapters, but rather as representative of the whole and conspicuous perhaps as much by the possibilities of the subjects as by superiority of presentation.

The book is well published and many of its illustrations are of unusual merit, though of one of its colored plates, that showing vaccinia on the tenth day, it must be said that it is fearfully and wonderfully made.

It may safely be expected that the succeeding volumes of this work will be worthy companions of the one under discussion, and, since that is so, we are apparently to have a system of medicine of which we shall have reason to be proud. It must be a sincere regret to us all, however, that the one who planned and originated a work so admirable should not have lived to enjoy its accomplishment.

Die Meningitis serosa acuta. Eine kritische Studie. Von Dr. med. GEORG BOENNINGHAUS, in Breslau. Wiesbaden: J. F. Bergmann, 1897. Pp. viii–99.

OF several recent articles upon acute serous meningitis, a subject that has attracted increasing attention during the past few years, this monograph is one of the most complete. The history, pathological anatomy, ætiology, symptoms, and treatment of the condition are fully and concisely presented. On account of the difficulty of demonstrating post mortem a mild grade of the lesion, special attention is devoted to the pathological diagnosis, and this chapter is one of the most valuable portions of the monograph. The author urges recourse to gross frozen sections as the only reliable method of demonstrating the patency or occlusion of the various ventricular foramina, an essential detail in the examination which is discussed at length.

As therapeutic procedures, the history, present status, and indications for lumbar puncture, aspiration of the ventricles, and incision of the dura are considered. The bibliography is complete with the exception of some very recent articles.

Transactions of the American Association of Obstetricians and Gynæcologists for the Year 1896. Philadelphia: W. J. Dornan, 1897. Pp. viii–457.

THIS is a substantial addition to an excellent series of reports. From the president's inaugural, which bristles with the peculiarities and excellences for which he is distinguished, to the very end of the volume, there is nothing dull. The papers are mostly short, but a notable exception is that of Dr. Murphy, of Chicago, which is the careful record of a large amount of experimental work relating to the union of divided arteries and veins by suture, fortunately an operation one is seldom called upon to perform. The industry and suggestiveness manifested by the paper are quite in harmony with Dr. Murphy's work in the past.

BOOKS, ETC., RECEIVED.

Surgery of the Rectum and Pelvis. By Charles B. Kelsey, A. M., M. D., Professor of Surgery at the New York Post-graduate Medical School and Hospital, etc. With Two Hundred and Eight-one Illustrations and Half-tone Plates. New York: Richard Kettles & Co., 1897. Pp. xviii–1 to 573.

Aphasia and the Cerebral Speech Mechanism. By William Elder, M. D., F. R. C. P. Ed., Physician to Leith Hospital. With Illustrations. London: H. K. Lewis, 1897. Pp xii–259. [Price, 10*s.* 6*d.*]

Diseases of the Ear, Nose, and Throat, and their Accessory Cavities. By Seth Scott Bishop, M. D., LL. D., Professor in the Chicago Post-graduate Medical School and Hospital, etc. Illustrated with One Hundred Colored Lithographs and One Hundred and Sixty-eight Additional Illustrations. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1897. Pp. xv–2 to 496. [Price, $4.]

Compressed-air Illness, or So-called Caisson Disease. By E. Hugh Snell, M. D., B. Sc. Lond., Diplomate in Public Health of the University of Cambridge, etc. London: H. K. Lewis, 1897. Pp. viii–251. [Price, 10*s.* 6*d.*]

A Compendium of Botanic Materia Medica for the Use of Students in Medicine and Pharmacy. With a Glossary. By Samuel Waggaman, M. D., Phar. D., Professor of Botany and Materia Medica, National College of Pharmacy, Washington, D. C. Revised and Corrected Edition. Washington: W. H. Lowdermilk & Co., 1897. Pp. 9 to 504.

A Contribution to the History of the Respiration of Man. Being the Croonian Lectures delivered before the Royal College of Physicians in 1895. With Supplementary Considerations of the Methods of Inquiry and Analytical Results. By William Marcet, M. D., F. R. C. P., F. R. S. London: J. & A. Churchill, 1897. Pp. 116. [Price, $4.20.]

A Clinical, Pathological, and Experimental Study of Fracture of the Lower End of the Radius, with Displacement of the Carpal Fragment toward the Flexor or Anterior Surface of the Wrist. By John B. Roberts, A. M., M. D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic, etc. With Thirty-three Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. 5 to 76. [Price, $1.]

Retinoscopy (or Shadow Test) in the Determination of Refraction at One Metre Distance with the Plane Mirror. By James Thorington, M. D., Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Twenty-four Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. 9 to 66. [Price, $1.]

Syringomyelia. An Essay to which was awarded the Alvarenga Prize of the College of Physicians of Philadelphia for the Year 1895. By Guy Hinsdale, A. M., M. D., Fellow of the College of Physicians of Philadelphia and of the American Academy of Medicine, etc. Philadelphia: The International Medical Magazine Company, 1897. Pp. 3 to 74. [Price, $1.]

Proceedings and Addresses of the Third Annual Conference of the Health Officers in Michigan, held at the State Laboratory of Hygiene, State University, Ann Arbor, Michigan, July 16 and 17, 1896.

The Twenty-second Annual Report of the Secretary of the State Board of Health of the State of Michigan, for the Fiscal Year ending June 30, 1894.

Abstract of Proceedings of the Michigan State Board of Health, Quarterly Meeting, January 8, 1897.

The Annual Report of the Directors of the Mount Sinai Hospital, January, 1897.

State Library Bulletin. Additions No. 4, September, 1896. Additions to Medical Division, 1895. University of the State of New York.

The Johns Hopkins Hospital Reports. Studies in Dermatology, I.

New Inventions, etc.

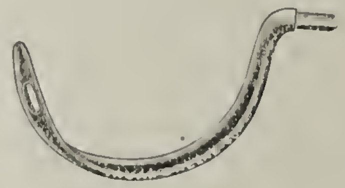
A NEW LIGATURE-CARRIER.

By Carey Kennedy Fleming, M. D.,

PROFESSOR OF GYNÆCOLOGY, GROSS MEDICAL COLLEGE; ATTENDING GYNÆCOLOGIST TO ST. ANTHONY'S HOSPITAL, DENVER.

The accompanying illustration depicts a ligature-carrier which was made for me by Messrs. Truax, Greene, & Co., of Chicago.

For it are alleged all of the advantages of any ligature-carrier, and in addition it can be used in an ordinary needle-holder for either abdominal or vaginal work. The operator, at his option, is able to place it at any angle.



Two varieties of the instrument are made—one, as shown in the cut, with a triangular shank, the other with ball shank, for use in the Etheridge needle-holder.

After constant use of this instrument for the past three years I take great pleasure in recommending it on its merits to the medical profession.

Miscellany.

The Action of Antipyrine on the Lacteal Secretion.—In an article on this subject, published in the *Journal des praticiens* for April 17th, M. Guibert states that he has administered antipyrine in nineteen cases to suppress the lacteal secretion. He divides these cases into two series: Those in which the patients nursed their infants for a few days, and those in which they did not. In the first series, the average daily amount given was forty-five grains continued for three or four days. In the second series, the amount was less, thirty grains a day always being sufficient to empty the breasts. The antipyrine was given every two hours in capsules containing four grains, and a longer interval was allowed to pass between the dose which preceded and that which followed the two meals of the day. The results in all the cases were very favorable. After the absorption of the antipyrine the breasts became empty and soft, and the lacteal secretion was completely exhausted.

The author states that he has employed this drug for the last six years in similar cases, and that he has never been disappointed in the results. In order to obtain these good results it is not necessary to give dangerous doses which provoke symptoms of poisoning, such as profuse sweating, various eruptions, headache, vomiting, and, in a more general manner, gastric symptoms. M. Guibert has never observed any symptoms of poisoning in his patients, although some of them have taken as much as two hundred and forty grains in six days, and two hundred and ten grains in five days.

Idiosyncrasies regarding certain medicaments play a considerable rôle, remarks the author, but this peculiar tolerance of antipyrine shown by women in their first confinement is noticeable, and it may be compared to that seen in pregnant women in regard to opium preparations.

M. Guibert does not try to explain this phenomenon, knowing that antipyrine passes easily into the urine, but he remarks that the integrity of the renal filter is an indispensable condition for the regularity of this elimination. In his experiments with this drug he has never observed any albumin in the urine of his patients.

Antipyrine is eliminated by the milk as well as by the urine. In order to find it in the latter, M. Guibert used iron perchloride as a reagent, and in a liquid containing traces of the drug it gave a most distinct reddish-brown color. This reaction was obtained about twelve hours after absorption of the first dose of antipyrine, and it was produced again thirty-six hours after the last dose.

In regard to the elimination by the milk, a much longer time elapsed, and it was not until twenty-four hours after absorption of the first dose that traces of the drug were found in the milk. A few drops of nitric acid were added to the milk containing traces of the antipyrine, and a light-green color was produced.

M. Guibert concludes that antipyrine is one of the most inoffensive medicaments for the suppression of the lacteal secretion.

The Medical Society of the State of Pennsylvania.—The forty-seventh annual meeting will be held in Pittsburgh on May 18th, 19th, and 20th, under the presidency of Dr. E. E. Montgomery, of Philadelphia. The programme includes the following papers: An Address in Medicine, by Dr. W. E. Hughes, of Philadelphia; An Address on Mental Disorders, by Dr. Theodore Diller, of Pittsburgh; The Value of Statistics, by Dr. Mordecai Price, of Philadelphia; Simple Methods and Materials in Perineal Surgery, by Dr. Joseph Price, of Philadelphia; Comforting Facts about Consumption, by Dr. Charles W. Dulles, of Philadelphia; Chronic Non-suppurative Otitis Media, by Dr. S. MacCuen Smith, of Philadelphia; The Umbilical Cord, by Dr. A. C. Wentz, of Hanover; The Treatment of Complicated Ulcers of the Cornea, by Dr. C. A. Veasey, of Philadelphia; Science in Medicine, by Dr. W. J. K. Kline, of Greensburg; Asphyxiation by Carbonic-acid Gas as the Death Penalty, by Dr. J. Chris Lange, of Pittsburgh; Rheumatism, by Dr. E. B. Borland, of Pittsburgh; A Report on Hydrophobia, by Dr. Charles W. Dulles; An Address in Hygiene, by Dr. A. P. Brubaker, of Philadelphia; The Treatment of Laryngeal Diphtheria with Antitoxine and Intubation, by Dr. T. J. Elterich, of Allegheny; The Daily Medical Inspection of Public Schools, by Dr. P. J. Eaton, of Pittsburgh; A Report of Two Interesting Cases of Intestinal Resection and Anastomosis, by Dr. X. O. Werder, of Pittsburgh; The Diagnosis and Treatment of Chronic Gastric Catarrh, by Dr. F. H. Murdoch, of Pittsburgh; Early Operation for Fibroid Tumor of the Uterus, by Dr. Charles P. Noble, of Philadelphia; Appendicitis in Children, by Dr. Leon Brinkman, of Philadelphia; Ovarian Tumor complicating Pregnancy—Porro Cæsarean Section, by Dr. F. Blume, of Allegheny; A Study of Epilepsy, with Special Reference to Auras and to some other Unusual Features, by Dr. Wharton Sinkler and Dr. F. Savary Pearce, of Philadelphia; An Address in Surgery, by Dr. J. Chalmers Da Costa, of Philadelphia; An Address in Ophthalmology, by Dr. Joseph E. Willets, of Pittsburgh; The Treatment of Typhoid Fever, by Dr. Solomon Solis-Cohen, of Philadelphia; Brief Views of Lesions and Treatment of Typhoid Fever, by Dr. F. S. Nevling, of Clearfield; One Hundred Cases of Typhoid Fever, by Dr. H. G. McCormick, of Williamsport; Foreign Bodies in the Cornea, by Dr. Edward Jackson, of Philadelphia; Resection of a Tumor of the Liver by Elastic Constriction Outside of the Abdominal Cavity, by Dr. W. W. Keen, of Philadelphia; A Case of Hæmorrhage in the left Frontal Lobe, with Symptoms Simulating those of Hysteria, by Dr. Samuel Ayres, of Pittsburgh; Two Hundred Cases of Speech Defects at the Philadelphia Polyclinic Hospital, by Dr. G. Hudson Makuen, of Philadelphia; Pleuritis, by Dr. E. H. James, of Harrisburg; The Importance of Hygiene and Treatment at the Change of Life, by Dr. J. A. Murray, of Clearfield; an Address in Obstetrics, by Dr. J. M. Baldy, of Philadelphia; A Common Cause of Loose Bodies in the Knee Joint, by Dr. W. M. Robertson, of Warren; The Pathology of Influenza, by Dr. Eugene Wasdin, of Pittsburgh; Climate in Consumption, by Dr. J. M. Douthett, of Pittsburgh; Malpractice Suits and the Remedy, by Dr. B. H. Detweiler, of Williamsport; Why the Tobacco Habit is Peculiarly Reprehensible in and Detrimental to Physicians, by Dr. Evan O'Neill Kane, of Kane; Subcutaneous Tenotomy as an Aid in the Reduction of Fractures, by Dr. John B. Roberts, of Philadelphia; The Faucial Tonsil as an Agent in Systemic Infection, by Dr. G. B. Sweeny, of Pittsburgh; The Necessity of Active, not Passive, Ear Treatment in Ear Disease, by Dr. Louis J. Lautenbach, of Philadelphia; Some Remarks on Appendicitis, with Reports of Operations, by Dr. I. C. Gable, of York; and The Element of Fear in Hæmoptysis, by Dr. W. T. English, of Pittsburgh.

The Action of Digitalis on the Circulation.—The May number of the *Journal of Experimental Medicine* contains an exceedingly valuable article entitled On the Action of Substances of the Digitalis Series on the Circulation in Mammals, by Mr. Arthur R. Cushny, whose experiments were performed in the pharmacological laboratory of the University of Michigan. In summing up, it may be stated, says the author, that the action of digitalis has been divided into two stages according to the changes evinced by the ventricles under its influence; of these, the first is characterized by marked inhibitory action together with modification of the cardiac muscle, while in the second the inhibitory action is less marked and the muscular action becomes the more prominent feature.

The inhibitory action is due to direct stimulation by this series of the pneumogastric centrally in the medulla oblongata and peripherally in the heart. The extent to which the inhibitory mechanism is stimulated varies in different animals and with different members of the digitalis series. The muscular action of small quantities betrays itself in a tendency to increase the extent of the contraction, while in some cases the degree of relaxation reached in diastole is also lessened by it. In larger quantities the series increases the irritability of the cardiac muscle very considerably, and the spontaneous rhythm of the ventricles therefore becomes developed.

Through the interaction of these two factors in the first stage the rhythm of the whole heart is slowed, the contraction of the ventricle is more complete, and the diastolic relaxation is generally increased, although it may be unchanged or lessened. The systolic pressure is increased and the fall from maximum to minimum pressure is slower than normal, owing to the increased completeness and longer duration of systole (Rolleston). The auricles generally contract with less force and may relax more completely than normally. Sometimes, however, their contractions also are more complete than before the injection of the drug. This latter condition generally precedes the diminution of the force of the auricular contraction. This variation of the effects of digitalis in the auricle explains the changes in intra-auricular pressure noted by Kaufmann.

The contraction volume of the ventricles is always much increased, and the output to the unit of time is generally augmented, and this together with the contraction of the peripheral arterioles causes an increase in the tension in the systemic circulation, an acceleration of the circulation, and possibly a temporary increase in the pressure in the great veins and in the auricle and ventricle in diastole (Kaufmann).

The pressure in the pulmonary artery is practically unaffected by some members of the series, while by others it is considerably increased. This difference in the reaction of the pulmonary circulation is due to the varying extent to which these drugs act on the peripheral arteries, and not to any difference in their action on the two sides of the heart.

If the inhibitory action is very strongly marked, the slowing of the heart may be extreme, the ventricles assuming their own spontaneous rhythm and all connection with the auricles being lost. While the contraction volume of the ventricle is still greater than normal, their output to the unit of time may become less than normal, the aortic tension therefore fall, and the rapidity of the circulation be lessened. The ventricles maintain their association throughout, and probably the rhythm of the two auricles also remains equal. The ventricular rhythm, however, becomes irregular, owing to the variation in the duration of the diastolic pause. The auricles may cease altogether in diastole, or may continue to beat with a slower or faster rhythm than the ventricles.

During the second stage the rhythm of the heart becomes accelerated, owing to the increased irritability of the heart muscle. The ventricle tends to assume a rapid spontaneous rhythm, while the auricular rhythm is also quicker than in the first stage. When these two rhythms interfere by the passage of impulses across the auriculoventricular boundary in either direction, irregularity of the heart is produced, generally bearing a distinctly periodical character. The ventricles continue to maintain their common rhythm, while the auricles and ventricles may contract at quite different rates. The two ventricles, however, do not necessarily contract with equal force, and the contractions of one may present periodical variations in strength, while those of the other may be almost perfectly uniform. The contractions of the auricles vary in the same way as regards each other and the ventricles. The inhibitory nerves are no longer able to slow the ventricular rhythm, but may affect the completeness of systole and diastole in the ordinary way. The auricular contractions can still be lessened in force and possibly be abolished by their stimulation, and the impulses passing between the auricle and ventricle may therefore be blocked and regularity of the heart produced by powerful inhibition. The irregularity of the contractions is therefore due indirectly to the increased irritability of the cardiac muscle, and the acceleration must be attributed to the same cause. An extreme phase of this stage produced by the interference of the rhythms is a temporary standstill of one of the chambers, generally the auricle.

The irregularity leads to a lessened efficiency of the work of the heart. The output varies extremely in successive observations and the contraction volume of every individual beat may differ. The various chambers often show a tendency to dilate during this stage. The blood pressure in the systemic arteries at first remains high, in fact, may be higher than in the first stage, owing to the increased rapidity of the heart rhythm, but afterward falls continuously as the periodical variations become shorter in duration.

The auricles generally cease contracting before the ventricles, but not invariably. There is no fixed order in the cessation of the ventricles or auricles. Each division comes to a standstill in a position somewhat nearer diastole than systole and then passes into delirium and dilates to the fullest extent.

A number of theories, says the author, have been put forward to explain the action of digitalis in heart disease. Traube's first view was that the slowing was the main factor, and undoubtedly this may have a beneficial effect in cases of tachycardia, although other drugs, such as aconite, which do not possess the characteristic muscular action, might be used in its stead for this purpose. The increased arterial pressure has also been considered of great importance in these cases, but can not be considered the essential feature of the digitalic action, for an equal increase in pressure may be obtained by the use of strychnine and other drugs which, however useful in circulatory abnormities, can not replace digitalis. The diuretic properties of the latter seem due to the increased tension in the renal arteries, for Bradford and Philipps have found that strophanthin, which constricts the arterioles less, causes also less diuresis or none at all in the normal animal. The rise in blood pressure must also play some part in therapeutics by improving the nutrition of the tissues, and especially of the heart itself, by a more rapid circulation. This greater rapidity of the circulation is, however, not due to the peripheral action of the drug, but to its action on the heart. In fact, the peripheral action may in many cases be dispensed with to the advantage of the patient, as is shown by the success attending the combination of digitalis and nitroglycerin, the latter of which can act in these cases only by opposing the action of digitalis on the peripheral vessels. The rapidity of the circulation is of course increased whenever the output of the heart is augmented, but the acceleration may be much diminished by a contraction of the peripheral arterioles. The action of nitroglycerin in causing a return to their normal calibre would therefore be indirectly to increase the rapidity of the circulation.

The beneficial results of digitalis in quickening the circulation are therefore due in the main to its direct cardiac action, and the question arises whether the changes described in the first part of the paper are sufficient to explain the therapeutic results, or whether some other change must be sought for. And it must be noted that the features to be discussed are those of the first stage, and indeed of the first part of the first stage, for the extreme slowing described as the pause phase is not elicited in the therapeutic use of these drugs. And first of all, in ordinary dilatation of the ventricle from any cause the action of digitalis is easily explained. In dilatation we find not only that the heart is unduly widened in diastole, but also that the amount of blood remaining in it in systole is greatly increased—the systole is rendered very much less complete than normal. The action of digitalis in increasing the contraction is therefore practically specific in those cases. In such a condition of abnormal dilatation in diastole it may be questioned whether digitalis, by its inhibitory action, will increase the diastolic distention. From the experiments the author is inclined to think that in dilated hearts the muscular action overcomes the inhibitory in this point and actually lessens the dilatation. At the same time, he says, the dilatation produced by excessive quantities of acetone-chloroform may not be amenable to the same treatment as that seen in valvular disease, etc., and he therefore states it as a probability only that the diastolic dilatation in dilated hearts is not increased by digitalis, but may remain unchanged or even be lessened by it.

One of the results of dilatation is regurgitation through the mitral valve, owing to the expansion of the ring surrounding the base of the valve. An increased contraction of the ventricle during systole will tend to contract this ring more and therefore lessen the regurgitation. Roy and Adami have shown that the papillary muscles contract with greater force under these drugs, and this will also tend to render the valve action more competent.

A tempting theory, says Mr. Cushing, is that the auricular contraction is rendered more complete and prolonged, as the ventricular is, and that the regurgitating blood, instead of striking on the relaxing wall of the auricle, is opposed by the completely contracted chamber; that, in fact, the closed auricle takes the place of the mitral valve. In his experiments, however, an actual increase in the contraction of the auricle was of but short duration, and the diminution of the force of contraction was much more commonly observed. This action, he says, may conceivably occur, however, at any rate in some cases. It must be remembered that injection of the drug directly into the blood may not be followed by exactly the same order of events as its administration by the stomach, and it is quite conceivable that the slower absorption by this method may lead to the development of the muscular as opposed to the inhibitory action to such a degree that the auricular contraction is actually increased in force instead of being decreased. If the muscular action could be divorced from the inhibitory, or rather if a drug could be found in which the inhibitory action was minimal, this effect on the auricle would certainly be present, for when the inhibition is paralyzed by atropine it occurs regularly. Unfortunately, this action of atropine can not be made use of in practical therapeutics. The question arises, whether the addition of such a drug as sparteine to digitalis might not be beneficial by depressing the vagus, in some cases at any rate, although sparteine has little direct action on the heart muscle.

It may be questioned, the author thinks, whether the prolongation of the ventricular systole is beneficial or not. In aortic regurgitation it may conceivably retard somewhat the return of the blood from the aorta, but here again the more complete emptying of the ventricle is more probably the important factor. The prolongation of the diastolic pause is undoubtedly a drawback here, although not such a serious one as Corrigan taught, for Roy and Sherrington have shown that the blood supply of the brain is actually increased by digitalis. Still, here again a drug with the cardiac action of digitalis and without its inhibitory action would presumably be of greater benefit. Stenosis of the orifices is also benefited probably by the improvement of the dilatation, but this stenosis is almost always accompanied by incompetency of the valves. In the right heart the therapeutic action may be explained in the same way as in the left. The increased contraction of the ventricle, and perhaps of the auricle, compensates here as on the left side for the dilatation and the valvular incompetency, whether these are direct results of disease of the left heart or of the lungs. In this relation, he says, it is noteworthy that digitalis increases the resistance to the passage of the blood through the lungs to a very much greater extent than strophanthus, and it might therefore be expected that in such cases as dilatation of the right heart from emphysema the latter would have more beneficial results than the former. He is unaware of any systematic examination of this point having been made as yet. The weakness of the heart met with in pneumonia, he says, may be in part due to the increased difficulty of the circulation through the solidified lung, but here, as in other fevers, is probably due rather to the toxic products absorbed and to the high fever. The action of digitalis here is therefore probably due to its improving the nutrition of the heart by increasing its output and the rapidity of the circulation, and not to any special action on the right side.

His experiments with each individual member of the series, he says, have been too few to enable him to draw conclusions as to the comparative value of each. In one only—erythrophlœine—has he found any very marked divergence from the general action, and this divergence is in the direction of a more marked inhibitory action and a less developed action on the cardiac muscle. In order to produce any important change in the latter, quantities of the drug have to be given which call forth the most marked slowing and often arrhythmia, and this fact seems to him sufficient to preclude the use of this drug in therapeutics, at any rate as a substitute for digitalis. In order to advance further in the therapeutics of this group, he thinks, we must find drugs with a more decided cardiac action and a relatively smaller action on the inhibitory apparatus, while erythrophlœine tends in the opposite direction.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 6th inst., Dr. Alexander Lambert was to read a paper entitled Sunstroke, which was to be discussed by Dr. Ira Van Gieson, Dr. H. P. Loomis, Dr. L. A. Connor, Dr. J. P. Thornley, Dr. L. F. Bishop, and others.

At the next meeting of the Section in General Surgery, on Monday evening, the 10th inst., the following papers will be read: Wound Infection with the *Bacillus aerogenes capsulatus*, by Dr. John T. Erdmann; and Kidney Tumors Derived from Suprarenal Rests, by Dr. P. R. Bolton. Cases will be presented by Dr. F. Kammerer and Dr. P. R. Bolton.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 11th inst., Dr. J. P. McGowan will read a paper on The Diagnosis of Diseases of the Bladder. Cases will be reported, and specimens and new instruments exhibited.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 13th inst., Dr. Edward B. Dench will read a paper entitled The Intracranial Sequelæ of Neglected Middle-ear Suppurations in Children, which is to be discussed by Dr. Herman Knapp, Dr. L. Emmett

Holt, Dr. E. Gruening, Dr. Gorham Bacon, Dr. A. M. Thomas, Dr. J. F. McKernon, and Dr. W. P. Northrup. Patients will be exhibited by Dr. Arthur L. Fisk.

The Artificial Coloring of Birds.—The *Écho médical du nord* for April 18th states that Dr. Sauermann has published a series of very curious observations regarding the artificial coloring of birds. It is known, he says, that the plumage of canaries which are fed with Cayenne pepper changes from yellow to red. This pepper contains, besides a coloring matter, an irritant principle and a fatty substance. When these two principles are extracted by maceration in alcohol, the pepper loses its coloring properties. If, however, the product of the maceration is combined with olive oil the coloring action is restored, and it is concluded from this that the fatty substance of the pepper is the necessary vehicle of the coloring matter. Experiments made on perfectly white chickens gave the same results. These chickens had the property of anticipating a change of temperature by a very pronounced change of color. The yolk of the eggs of these chickens was of a very intense red. The same experiment was tried with the root of *Anchusa tinctoria*, and a violet-red was obtained.

Laurenol, a New Antiseptic.—Laurenol, says a writer in the *Progrès médical* for April 17th, is a new antiseptic which has been pronounced satisfactory by the Municipal Laboratory, the Laboratory of Micrography of the City of Paris, and by that of M. Latteux, formerly of the Laboratory of Histology of the Faculty. The experiments with this antiseptic were carried out with water combined with putrefied blood. The number of colonies in a cubic centimetre was about eighty thousand, but after a cubic centimetre of laurenol was added, the colonies completely disappeared. Again, in filtered sewer water, after the addition of a cubic centimetre of the antiseptic, no colonies were found, while before an examination had revealed about seven hundred thousand.

A substance, says the writer, which gives such results can not long remain unknown to the medical profession.

M. Latteux has employed it in dressings and found that a three-per-cent. solution rapidly modified purulent secretions and greatly hastened cicatrization. In various cases of chronic and acute metritis it was used with excellent results; the odor of the secretions disappeared after the third injection.

"Ulcers of Sorts."—The *Indian Medical Record* for April 1st publishes a communication from Mr. Nitya Lall Chowdhuri entitled A Cure for Piles and Ulcers of Sorts.

Pellotine as a Sedative and Hypnotic.—The *State Hospitals Bulletin*, Volume II, No. 1, publishes a report on the use of this drug by Dr. Richard H. Hutchings, of the St. Lawrence State Hospital, in which he gives a brief summary of four illustrated cases. The results, he says, were, on the whole, rather favorable, although unpleasant side effects were observed in several instances, and in some cases it seemed to have no effect when given in moderate doses. An objectionable effect of the drug was its tendency to cause vertigo when it was given in doses sufficient to produce its full effects; but this was observed only when the patients were out of bed, so that a recumbent posture evidently obviates it to a great extent. In no instances, moreover, were the effects sufficiently severe to call for treatment.

Dr. Hutchings states that the sleep produced by pellotine is particularly calm and natural, and that the patient can be aroused readily. No unpleasant aftereffects, such as headache, nausea, or coated tongue, are observed, and the patient usually awakes refreshed and calm. When it is given during the morning hours two or three hours' sleep can be obtained; when it is given at bedtime the patients, as a rule, sleep much longer, frequently through the night.

Dr. Hutchings thinks it is not possible to determine accurately the value of a drug of this kind in one series of observations, but that it at least merits further trial. Several points regarding its physiological action, he says, have suggested themselves, which have not been determined satisfactorily, such as its effect upon the appetite and its action, if any, upon the secretions. It did not seem to affect the secretions in any of the cases referred to, and, if further trial proves this to be true of its action, he thinks it will greatly enhance the value of the remedy.

A Bladder with Four Ureters.—The *Presse médicale* for April 17th contains an account of the Réunion biologique de Nancy, at which M. Jacques stated that ureteral anomalies were comparatively frequent, a fact which was explained by the successive modifications which this duct underwent during the course of development.

Two or three times in a hundred autopsies the ureter had been found divided at its upper end, which, he said, was but an exaggeration of the normal division of the pelvis of the kidney. The complete division with double vesical anastomosis was infinitely rarer, especially when this disposition was bilateral.

Such a division of the ureter, congenital, complete, and bilateral, had been found in an elderly woman who presented symptoms of a visceral tuberculosis of long standing, without any appreciable alteration, moreover, of the urinary system. On the right and on the left there were two distinct renal pelves. The two ureters on the left side opened side by side into the bladder like a double-barreled gun. On the right side one of the ureters was inserted in the usual place, the other midway between the opening of the first and the vesical meatus. The uterus was atrophied, fibromatous, and cystic.

The American Academy of Medicine.—The twenty-second annual meeting will be held in Philadelphia on Saturday and Monday, May 29th and 31st, under the presidency of Dr. J. C. Wilson, of Philadelphia. Besides the president's address, the programme includes the following papers: The True Principles on which the Medical Profession should be Associated, and the Character of the Resulting Organization, by Dr. Leartus Connor, of Detroit; Physicians' Mutual Aid Societies, by Dr. John B. Roberts, of Philadelphia; Quid pro Quo—Present and Future, by Dr. C. C. Bombaugh, of Baltimore; The Relation of the Physician to the Public Press, by Dr. Solomon Solis-Cohen, of Philadelphia; Some Relations of Author, Publisher, Editor, and Profession, by Dr. George M. Gould, of Philadelphia; Medical Reviews, by Dr. Walter L. Pyle, of Philadelphia; The Influence of a Liberal Education, with Reference to Medical Ethics, by Dr. Elmer Lee, of Chicago; Hospital Abuse, by Dr. W. L. Estes, of South Bethlehem, Pennsylvania; The Result of a Year's Endeavor to Lessen the Dispensary Abuse in the Rhode Island Hospital, Providence, by Dr. F. T. Rogers, of Providence; Are Physicians Up to Date? a Sociological Inquiry, by Dr. Charles McIntire, of Easton, Pennsylvania; The Relation of Alcohol to Preventive Medicine, by Dr. J. W. Grosvenor, of Buffalo; The Truth about Calomel, by Dr. Everett Flood, of Baldwinsville, Massachusetts; The Great Physician of the Revolution: A Doctor *sans peur et sans reproche*, by Dr. A. L. Gihon, of the navy; Where shall we put up the Bars? A Plea for Preliminary Education, by Dr. A. L. Benedict, of Buffalo; The Side of the Medical School, by Dr. Bayard Holmes, of Chicago; The Side of the College, by Dr. Ethelbert D. Warfield, of Easton, Pennsylvania; and The Side of the University, by Dr. William Pepper, of Philadelphia.

The Treatment of Infectious Nephritis with Tincture of Cantharides.—In the *Gazette hebdomadaire de médecine et de chirurgie* for April 11th Mademoiselle Antoinette Myszynska, an interne in M. Barth's service, gives an account of experiments with tincture of cantharides in the treatment of ten cases of epithelial nephritis. It was administered in doses of from six to eleven drops in a glass of milk. The patients were first put upon a milk diet, then on the ordinary diet of the hospital, a condition which conduced to a better appreciation of the effects of the tincture on diuresis and on albuminuria. During these investigations the same bottle containing the tincture was used, and the patients took the drug in the presence of the attending physician. In the ten patients treated the results were as follows: Rapid and complete recovery from a persistent albuminuria occurred in a malarial subject, forty years old; recovery from an excessive albuminuria which had resisted all other treatment for seventeen months, in a tuberculous subject, thirty-three years old, with improvement in the general condition and fibrous cicatrization of the lesions of the third degree; improvement in three cases, which was interrupted by the departure of the patients against the advice of the physician; and, finally, negative results in five cases. These were: 1. In two arterio-sclerotic subjects with lead poisoning, in whom the influence of the tincture was shown by a rapid increase of the albuminuria and an aggravation of the general condition. 2. In two cases of chronic epithelial nephritis in which the influence of the drug on the albuminuria was very nearly indifferent, without any injurious action on the general condition of the patients. 3. In a case of pulmonary tuberculosis with cutaneous torpor in which the administration of the tincture, by increasing the quantity of albumin passed, provoked a rise in temperature the persistence of which made a cessation of the use of the drug necessary.

In eight of the ten cases (all but those of lead poisoning) the tincture of cantharides manifestly and rapidly increased the amount of the urine, and this increase persisted after the cessation of the drug and the suppression of milk in the patient's diet.

A new point observed, says the writer, was that, the tincture being administered in all cases at first with the absolute milk diet and afterward with a mixed diet, the proportion of albumin decreased in spite of the suppression of the milk, and diuresis remained abundant.

Without exception, a marked increase of appetite was observed in the patients, sometimes exceeding all ordinary limits. It is astonishing, the writer thinks, that this did not provoke digestive troubles or increase the quantity of the albuminuria, which remained stationary for a month, during which time the tincture was given in doses of four drops a day.

In one case the drug seemed to have a peculiarly salutary and unexpected influence on the general condition of the patient, a full account of which is given by the writer.

According to Liebreich's theory, she says, it might be well to try the curative effects of cantharides in cases of tuberculosis of the third degree, in which the medicament seems to have such a salutary influence, as was proved by the observation referred to above.

On the other hand, this drug should never be tried in persons affected with lead poisoning or in arterio-sclerotic subjects, in whom it seems to arouse uræmic symptoms. The writer concludes that, as the tincture of cantharides is a remarkable diuretic and a valuable means of decreasing the degree of albuminuria in young subjects suffering from epithelial nephritis, it will be useful to continue its employment in similar cases, in doses of from four to twelve drops in a glass of milk; it use should, however, be suspended on the least symptom of intolerance, and resumed after a time in progressive doses.

M. Du Cazal, says the writer, insists particularly upon the necessity of repeated doses of the tincture after short intervals of rest, if the drug has not shown itself efficacious the first time, and he cites favorable instances in support of this statement.

The Influence of the X Rays on the Pulse.—The *Lyon médical* for April 11th contains a report of the proceedings of a meeting of the Société nationale de médecine de Lyon at which M. Destot presented a communication on the changes in the pulse of subjects who were submitted to the X rays. The trophic troubles, he said, which had been noticed by many investigators after exposure to the X rays were never produced immediately; sometimes they did not appear until from eight to twenty days afterward. In that case there was not a direct action comparable to that of sunstroke, but a reflex action of the central nervous system.

On the other hand, M. Destot, who had usually made use of the static machine to work the Crookes's tubes, had never observed trophic troubles in himself or in the subjects of his experiments. These facts, he thought, warranted the statement that trophic troubles were not dependent upon the X rays themselves, but rather upon the electric atmosphere which they created around them.

The first sphygmographic tracings presented by M. Destot had been obtained with the coil, and the second with the static machine.

The action of the X rays produced in the tube under the influence of the static machine was not lasting; the pulse lost its normal dicrotism, the tracing became more lengthened, and its breadth diminished; but when the action ceased, the pulse almost immediately regained its usual rhythm.

With the coil it was not the same. At first the same tendency to suppression of the dicrotism was observed, but very soon a true polycrotism supervened; at the end of half an hour intermissions occurred, and if the experiments were prolonged, arrhythmia was produced, with abortive pulsations. These results were persistent, and they could still be recognized half an hour after the cessation of the action of the tube.

In communications on this subject M. Destot thought these facts should be taken into consideration, and that the proper action of the X rays should be distinguished from that of the electric atmosphere which they created around them.

Intolerance of Bismuth.—At a recent meeting of the Société de thérapeutique, a report of which is published in the *Gazette hebdomadaire de médecine et de chirurgie* for April 15th, M. Dalché related the case of a patient who had been attacked three times by a scarlatiniform erythema, followed by desquamation in patches, in consequence of having taken thirty grains of bismuth subnitrate that had been prescribed after an attack of diarrhœa which, the speaker thought, might have been the cause of the skin trouble.

In fact, he said, the symptoms of poisoning with bismuth were very different from those observed in this case. One of the most frequent was pigmentation of the face, and stomatitis, enteritis, albuminuria, and hepatic congestion were also observed.

One fact was important, and that was the tolerance of the organism for bismuth; this tolerance, however, was not observed except when the bismuth subnitrate was not attacked at all, or only slightly, by the digestive juices. When it was injected under the skin, the subnitrate became combined with proteic matters, and this combination was soluble in the alkalies and the organic acids. These facts had been established by experiments undertaken by M. Dalché and M. Villejean.

Some Uses of Chloral Hydrate in the Diseases of Children.—In *Treatment* for March 11th Dr. G. A. Sutherland remarks that chloral hydrate belongs to the class of drugs the dangers of which are so emphasized that their good qualities are apt to be lost sight of. He does not advocate its indiscriminate use, but he shows that when it is employed in suitable cases at the proper time, and in doses sufficient to produce a definite effect, it may prove of value.

It is essential, he says, that the drug should be absolutely pure, and that the patient should be kept in bed and carefully watched when full doses are employed. With these precautions, no bad effects, either immediate or remote, will follow. The appetite is not interfered with, the intestinal functions are not disordered, symptoms of cardiac failure do not occur, and the drowsiness and lassitude produced by full doses pass off when the use of the drug is stopped. It may be administered alone or with tincture of digitalis when cardiac complications exist, and in some cases it may be advantageously combined with potassium or ammonium bromide.

Dr. Sutherland gives an account of three cases in which he employed chloral hydrate with good results. The first case was that of a girl, eight years old, who was subject to epileptic attacks which were controlled by the chloral hydrate in combination with potassium bromide. A period of four months has elapsed since the occurrence of the last fit, and the patient's general health is excellent. The second case was one of progressive chorea in a girl of ten years. The cardiac action was rapid and somewhat weak, and a systolic murmur of mitral origin was present. Active measures were therefore called for, and four ounces of brandy were given every day, and ten grains of chloral every four hours. After four doses had been given the patient obtained about twenty-four hours' sleep and rest, and the use of chloral was then resumed, in ten-grain doses twice a day. On the eighth day the jerking had practically ceased, and co-ordinating movements of the limbs could be carried out with precision. The use of the chloral was discontinued five days later, and the patient was allowed to get up.

The third case was one of bronchitis and asthma in a child over three years of age, and it illustrates the effect of chloral in the paroxysmal dyspnœa of asthma.

These affections, says Dr. Sutherland, resemble each other in being associated with an unstable condition of the nervous system, which manifests itself by some disturbance of function. This disturbance by repetition leads to the production of a vicious habit which it is difficult to cure. It is probable that no single drug is suited to all cases of this description, and in his experience chloral is serviceable in some cases. The best method of administration would appear to be to give the drug at first in full doses so as to break the habit as quickly as possible, and then in doses sufficiently large to keep the evil tendency in check.

The Treatment of Scalp Ringworm with Formic Aldehyde.—In the *British Medical Journal* for April 7th, Dr. Leslie Roberts refers to some clinical and experimental observations concerning the action of formic aldehyde on scalp ringworm, which were published by Dr. Alfred Salter in the same journal for September 12, 1896, in which it was asserted that the beneficial action of formalin was due to its extraordinary powers of penetration.

Unfortunately, however, Dr. Roberts says, Dr. Salter did not take the necessary steps to prove this assertion, and the experiments recorded by him are quite irrelevant to the hypothesis in question. If formic aldehyde kills the ringworm fungi by actual penetration into the follicle, then the intrafollicular portions of the affected hairs, after sufficiently prolonged treatment with formalin, should remain sterile when sown on nutrient media. By the result of this mode of experimentation, the author remarks, Dr. Salter's hypothesis stands or falls. He states that he has tried the forty-per-cent. solution of formalin in a moderate number of cases of ringworm of the scalp. In one case the solution was well rubbed in every morning for five consecutive days, and after an interval of a few days reapplied in the same way till the necrotic cuticular epidermis began to separate *en masse.* To test whether the formalin had really penetrated to the bottom of the follicle Dr. Roberts removed an intrafollicular stump from beneath the epidermal scab and planted it in standard soil of Sabouraud's formula. In the usual time the thin superficial vegetation characteristic of microsporon made its appearance, thus proving, he says, that, in this case at least, the formalin, after repeated application, had not penetrated into the depths of the follicle.

Dr. Roberts thinks there can be no question as to the lethal action of formic aldehyde on the trichophyta as well as on other forms of mould growth, but it is his opinion that the so-called germicides exert their beneficial action in ringworm of the scalp not in virtue of their germicidal properties, but by their stimulating effects upon the hair papillæ. This statement, of course, he says, does not apply to the surface of the scalp, or to the upper parts of the follicles which are directly accessible to the drug.

It seems to him that the action of formic aldehyde closely resembles that of phenol, although he thinks it is less reliable than phenol on account of the very possible accident of suppuration which occasionally accompanies what may be called the normal phenoloid action of the aldehyde. He has seen a forty-per-cent. solution of formalin set up suppuration which has persisted for weeks. On the other hand, he has never seen, in the course of ten years' experience, the ninety-five-per-cent. liquid carbolic acid produce the slightest trace of suppuration when applied to the scalp.

There can be no question, he thinks, of the powerful stimulating effect of formic aldehyde on the growth of hair; and this, he says, combined with its germicidal action on the surface fungus, renders it a useful, but by no means specific, remedy in cases of scalp ringworm.

THE NEW YORK MEDICAL JOURNAL, MAY 15, 1897.

Original Communications.

THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM AND ITS CONSTITUENT NEURONES,

AS REVEALED BY RECENT INVESTIGATIONS.*

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I.

THE HISTORY OF THE DEVELOPMENT OF THE NEURONE CONCEPT.

The study of neurology—Older views regarding nerve cells and nerve fibres—Deiters's studies—Processes of nerve cells—Protoplasmic and axis-cylinder processes—von Gerlach's studies—Idea of a diffuse nerve network—The newer investigations—Golgi's method—Types of nerve cells described by Golgi—Cell of Type I and cell of Type II—Golgi's hypotheses—Contributions of His and Forel—Opposition to the idea of a nerve network—Origin of the idea of a nerve feltwork or neuropilem—Doctrine of the individuality of the nerve elements—The principle of contact formulated—Researches of Cajal—Denial of occurrence of anastomoses among nerve elements—The collateral branches of the axis-cylinder processes—Tendency to external morphological uniformity among the nerve elements—Transition forms between cells of Type I and cells of Type II—The cells in sensory and motor regions—Studies of other investigators—The method of vital staining introduced by Ehrlich—The results afforded by it—Waldeyer's review, in 1891, of the newer investigations in 1891—The term *neurone* applied to the whole nerve unit—The neurone conception of the nervous system.

In face of the many questions concerning bacterial toxicology, internal secretion, self-intoxication, serotherapy, and organotherapy, subjects all fraught with practical import sufficient to explain the absorbing interest in medical circles regarding them, I might have had some hesitation in choosing as the subject of this address the title given above, had I not realized that this topic was the one which more than any other since the beginning of scientific records had occupied and must ever occupy the minds of thoughtful physicians in all countries of the world. And one can not but feel that when these burning questions of to-day shall have been settled or supplanted by others, subsequently thought to be more important, the problems connected with the nervous system, that portion of man's organism which in the main is accountable for the high position he has assumed among the animals, by means of which, in addition to the advantages of reflexes and instinctive reactions, he is able not only to gather multiple experiences, but to communicate them to his fellows and to utilize them in bettering his conditions, to study, to investigate, and to speculate—these problems will still remain the most attractive and absorbing. At the end of a decade which has witnessed an unprecedented activity in this domain, the results of which have led to a complete revolution in our ideas concerning the elements of the nervous organs and their architectural relations, and have supplied us with a host of new methods of investigation, the study of neurology, especially of the human nervous system in health and in disease, is particularly alluring. Entirely new avenues of research have been opened up, and problems hitherto thought to be situated almost outside the limits of scientific inquiry now seem at least within human possibility.

For a meeting of this character it has seemed to me advisable to gather together in as simple a manner as possible some of the more general results of modern neurological investigation and to hint rather at the outlook for the future than to detail at length the results of any single original research. Nor would it be possible in the time at my disposal to cite even the main results obtained in all the different directions in which neurological inquiry has been pursued. I shall have to be content with reviewing some of the main achievements in the departments with which I am most familiar, leaving it, however, to be distinctly understood that in the others many just as important conclusions have been arrived at and much fundamental experimentation is still in progress.

Entertaining as it could be made, it is not my purpose to give a review of the evolution of the various doctrines held at different times regarding the structure and function of the central and peripheral nervous system, nor to describe the gradual modifications and inventions in anatomical and histological technique which have been evolved with each new theory and which have opened up new fields for study. It will be necessary, however, in order to make clear the phenomenal advance represented by the ideas which at present prevail, to speak briefly of the unsatisfactory state of the views which immediately preceded them.

Considering the remarkable activity manifested during the epoch-making period of 1838–'40, when, incited by the publications of Schleiden and Schwann, anatomists busied themselves in ransacking all regions of the body, hunting for "cells," it is not surprising that a number of them turned their attention to the nervous organs, concerning the finer structure of which little was then known. Ehrenberg, as early as 1833, in studying the spinal ganglia and the central nervous system, had undoubtedly seen the ganglion cells in the former and the medullated fibres in the latter, although he described them as capillary tubes. After him, Valentine and Purkinje gave better descriptions, the former of the spinal ganglion cells, the latter of the ganglion cells in the brain. Emmert, Henle, and Rosenthal studied the differences in size and number of the fibres in the ventral and dorsal roots of the spinal nerves.* But to Remak and Helmholtz belongs the credit of showing that a portion, at least, of the processes of the nerve cells of vertebrates go directly over to form nerve fibres, at any rate in the sympathetic system. Von Kölliker in 1844 described the unipolarity of the cells in the ganglia of the dorsal roots, and the origin of medullated nerve fibres from them, although it was not until 1875 that Ranvier demonstrated the division of the process at a distance from the cell, while the real explanation of the unipolarity and its relation to the bipolar condition in fishes was first worked out in the embryological studies of His.

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* Based on remarks made before the Medico-chirurgical Faculty of Maryland, April, 1896.

* The discovery that the ventral roots of the spinal nerves are concerned with motion, the dorsal roots with sensation, had been made earlier by the eminent English physician Sir Charles Bell.

With regard to the connection of the nerve cells, within the central nervous system itself, with conduction paths, the first observation is that of Wagner,[*] who in 1847, while studying the electric lobe of the torpedo's brain, found that of the numerous processes possessed by the nerve cells only one or rarely two remained unbranched and became connected with a nerve fibre, a finding which Remak in 1854 asserted also for the cord and brain of the ox, and which in the following year he stated was true in general of all motor cells. The most important observations and generalizations of this period were, however, made by Deiters, the distinguished investigator at Bonn, who, like many others who have successfully pursued scientific studies, died at a comparatively early age.[†]

Deiters made an extremely careful study of the various processes of nerve cells with the best technical methods at his disposal and classified them all into two great groups: (1) Protoplasmic processes which were branched and whose internal structure corresponded closely to that of the body of the nerve cell, the protoplasm of the process being granular, and sometimes even pigmented; and (2) axis-cylinder or nervous processes consisting of a rigid hyaline, more resistant substance which at a short distance from its origin in the nerve cell passed directly over into a medullated nerve fibre (Fig. 1).[*]

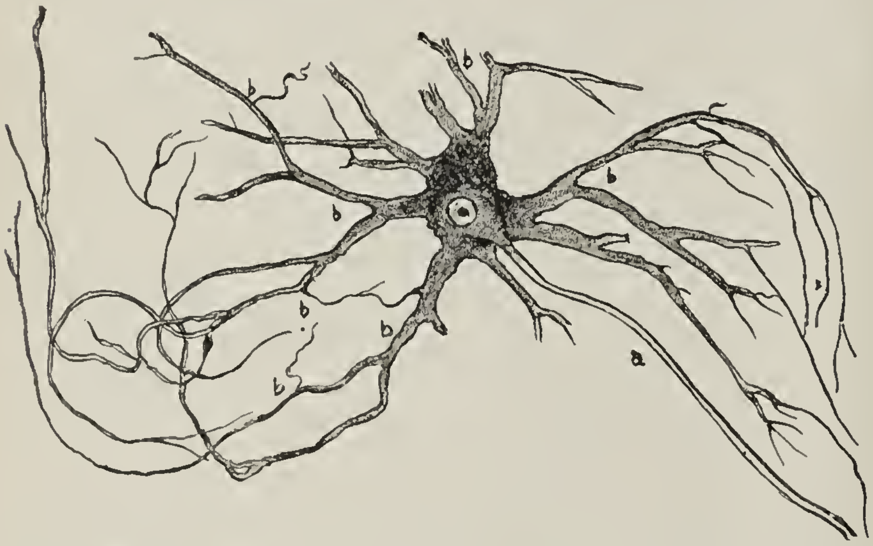

Fig. 1.—Multipolar ganglion cell from the ventral horn of the gray matter of the spinal cord of the ox. (After Deiters.) *a*, axis-cylinder process; *b*, protoplasmic processes.

Waldeyer, in his excellent review of the more recent investigations into the anatomy of the nervous system,[†] lays emphasis upon the point that despite the enormous value of his researches Deiters did not actually demonstrate the connection of a ganglion cell of the central nervous system with a peripheral nerve fibre, a fact to which Kölliker and Gerlach had previously made reference. The connections of the axis-cylinder processes of the cells of the ventral horns with the axis cylinders of the fibres of the motor roots of the spinal nerves were first absolutely established by the use of Weigert's mordant methods of staining the myelin sheath.[‡] The counting experiments of Birge[#] in Ludwig's laboratory showed a remarkable accordance in the number of ventral horn cells and that of the fibres in the ventral roots, and led many physiologists and anatomists to the belief that each motor fibre in the ventral root was connected with a corresponding cell within the gray matter of the cord.

More widely reaching in influence, for some time at least, were the studies of Gerlach with the gold method and the hypotheses which he based upon them, hypotheses which were responsible for an immense amount of polemical writing during the fifteen years which followed their introduction. Gerlach, by means of methods of isolation and treatment with chloride of gold, obtained pictures surpassing by far, in extent and delicacy, any obtainable with the older methods, and affording an entirely new concept of the complexity of the structure of the gray matter of the spinal cord and brain. In addition to the bodies of the nerve cells and their main processes, protoplasmic and nervous, the new method revealed the most intricate and involved appearances, which led Gerlach to believe that he had discovered a most extensive and delicate diffuse network within the gray matter (Fig. 2). Not satisfied with the simple description of his findings, he proceeded to set up an interesting hypothesis, based largely upon the physiological ideas which prevailed at the time, regarding protoplasmic continuity.[‖] He con-

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[*] Wagner, R. *Ueber der feineren Bau des elektrischen Organs im Zitterrochen.* 1847.

[†] Otto Deiters's book, *Untersuchungen über Gehirn und Rückenmark des Menschen und der Säugethiere*, Braunschweig, 1865, was issued by Max Schultze, two years after the author's death.

[*] In reality, Deiters described two kinds of axis-cylinder processes, coarse and fine, the description in the text applying to the former. He thought that the finer axis-cylinder processes could be present in numbers on single nerve cells, arising from the protoplasmic processes and going over into the fine medullated fibres of the central nervous organs.

[†] Waldeyer, W. Ueber einige neuere Forschungen im Gebiete der Anatomie des Centralnervensystems. *Deut. med. Woch.*, 1891, No. 44 *et seq.*

[‡] Weigert's methods and the carmin methods of Gerlach in conjunction with improved technique in sectioning went far to advance investigations in neurology.

[#] Birge, E. A. Die Zahl der Nervenfasern und der motorischen Ganglienzellen. *Archiv für Anatomie und Physiologie*, 1882. *Physiologische Abtheilung*, p. 435.

[‖] This assumption of protoplasmic continuity has also been made use of by Mr. Herbert Spencer in the development of his doctrine of the genesis of nervous systems. *Principles of Psychology*, vol. i, p. 529. The botanists, following especially the researches of Gardiner, teach at present that in plant tissues the protoplasm of all the cells forms a *con* cluded that he had to deal with a complex nerve network,* consisting of a genuine reticulum of delicate fibrils resulting from the fusion of the ultimate dendritic branchings of the protoplasmic processes of the nerve cells of the central organs. From the far side of this network, through gradual fusion and concentration of the threads belonging to it, broader fibres slowly appeared, which finally were to be recognized as genuine nerve fibres, becoming medullated and forming the fibres of the dorsal roots (sensory fibres) and in part the white fasciculi of the spinal cord. Gerlach's view, therefore, was that the axis cylinders of motor nerve fibres represented nervous processes coming off directly from nerve cells, while the sensory fibres of the dorsal roots were to be looked upon as nerve fibres arising from nerve cells only indirectly through the intervention of a diffuse nerve network made up of their protoplasmic processes. Thus, according to his scheme, with which Boll and Haller essentially agreed, the whole nervous system represented a protoplasmic *continuum*—a veritable *rete mirabile* (Fig. 3). Such was the state of affairs at the time when what we are accustomed to call the "newer investigations" were begun. A more unsatisfactory condition of knowledge or a more prohibitive hypothesis can scarcely be conceived; all ideas of tracing out definite conduction paths or of localization of function within the central nervous system seemed well-nigh hopeless; in the general diffuse network investigators were halted by what appeared to be an insuperable barrier.

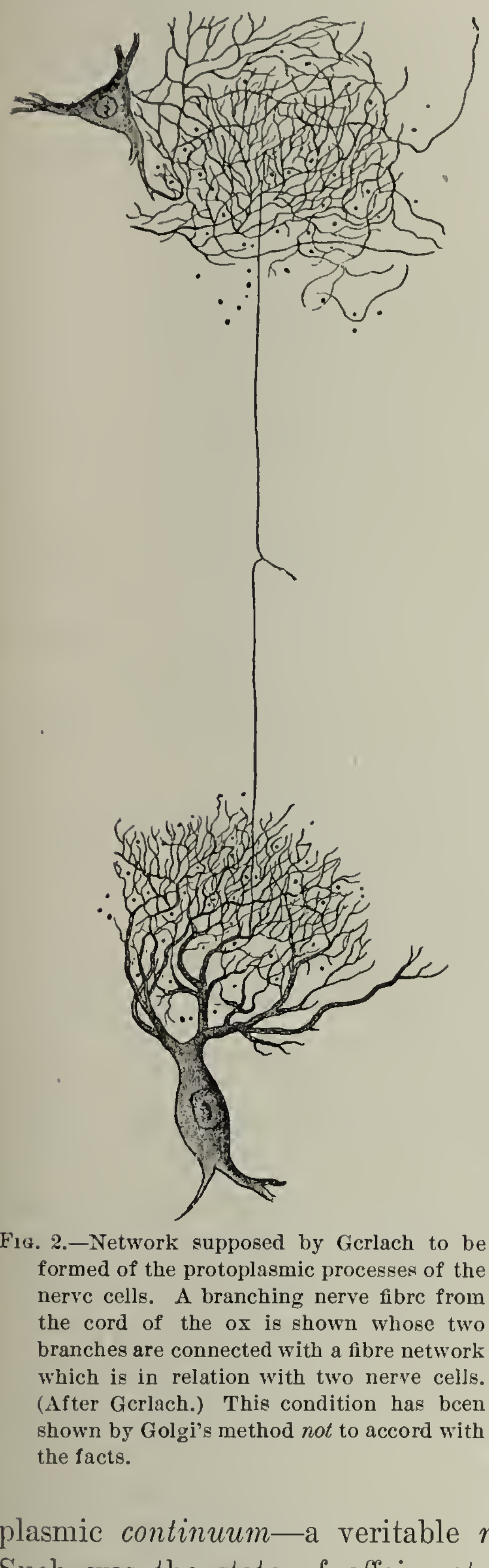

Fig. 2.—Network supposed by Gerlach to be formed of the protoplasmic processes of the nerve cells. A branching nerve fibre from the cord of the ox is shown whose two branches are connected with a fibre network which is in relation with two nerve cells. (After Gerlach.) This condition has been shown by Golgi's method *not* to accord with the facts.

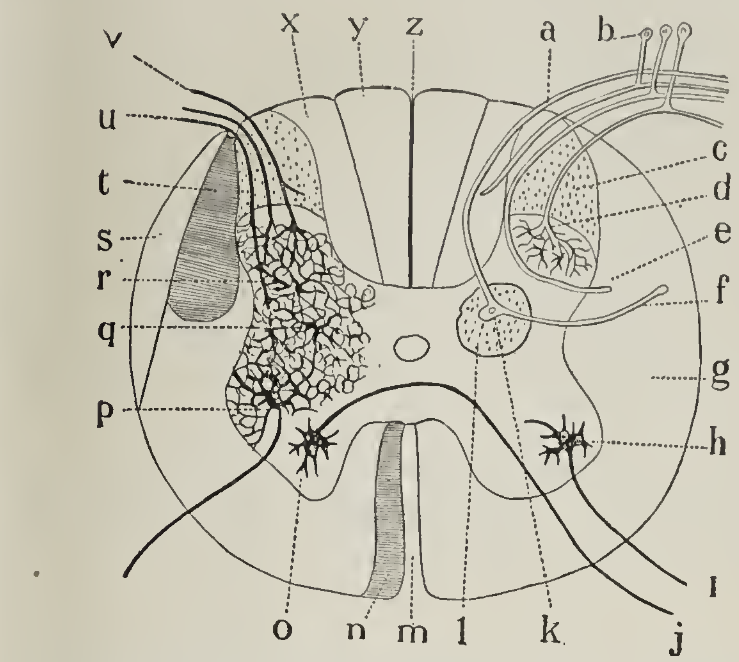

Fig. 3.—Scheme of connections of dorsal and ventral roots of spinal cord according to Gerlach's theory. (After Cajal.) *a*, fibre of dorsal root supposed to have its origin in Clarke's nucleus; *b*, unipolar cells of spinal ganglion; *d*, termination of a dorsal root fibre in the reticulum of the dorsal horn; *e*, root fibre going to pass longitudinally in the lateral column; *f*, fibre from Clarke's nucleus directed toward the lateral column; *g*, lateral column; *h*, motor cell connected with fibre of ventral root, *i*; *j*, fibre of ventral root coming from a cell in ventral horn of opposite side; *k*, column of Clarke; *m*, ventral median fissure; *n*, column of Türk; *p*, cell of ventral horn, the protoplasmic processes uniting to form a network, *q*, in which the fibres of the dorsal root terminate; *r*, cells of dorsal horns, the protoplasmic processes of which are united to the network, *q*; *s*, ascending fasciculus of lateral column; *t*, lateral pyramidal tract; *u*, *v*, fibres of dorsal root terminating in the network; *x*, fasciculus cuneatus of Burdach; *y*, fasciculus gracilis of Goll; *z*, median dorsal sulcus.

Then followed a series of researches, the majority of which date from the year 1880, and with which the names of Golgi, Ramón y Cajal, His, Kölliker, Van Gehuchten, Retzius, and von Lenhossék are inseparably connected. These investigations have led to a complete revolution in our ideas regarding the elements of which the nervous system is constructed and the mode in which these elements are put together in its architecture. It may surprise many to learn that the now world-famed Golgi's method was first described by its inventor, Camillo Golgi, of Pavia, as early as 1873.* But little attention was paid to it by investigators in other countries, however, until more than twelve years later, when he published his voluminous article, Concerning the Finer Anatomy of the Central Organs of the Nervous System. The method is now so well known that it is unnecessary to describe it here in detail. It will be recalled that it depends upon the treatment with a solution of nitrate of silver after previous immersion of the perfectly fresh tissue for a longer or shorter time in a solution of bi-

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tinuum, a fact which hinders many students of animal histology from asserting too positively the non-existence of such a *continuum* in the tissues of adult animals. The demonstration comparatively recently of the so-called plasma bridges connecting epithelial and endothelial cells, and also perhaps the elements of smooth muscular tissue with one another, is interesting in this connection.

* In gold preparations it must have been extremely difficult, and was probably impossible, to distinguish a network from a feltwork.

* Golgi, C. Sulla struttura della sostanza grigia del cervello. *Gazzetta medica italiana lombardia*, t. vi. 1873. Golgi's contributions to the bibliography of the nervous system have been collected and translated into German by Teuscher. Cf. Golgi, C., *Untersuchungen über den feineren Bau des centralen und peripherischen Nervensystems*, Jena, Fischer, 1894.

chromate of potassium.* The nerve cells and their processes stain intensely black and stand out prominently on the white or yellow ground. The pictures obtained are in extent, clearness, and sharpness, at least so far as the external form of the element is concerned, incomparably superior to those obtainable by any other known technical method.† As a rule, certain only of the nerve structures present are found to be impregnated in a successful preparation. Whether this effect is dependent or not upon functional conditions of the tissues at the moment of immersion we do not as yet know; certain it is that a distinct advantage is gained, inasmuch as the elements are represented, as it were, in a diagrammatic manner, and the study of them is in a high degree facilitated.‡

Golgi, by the application of these silver methods to the gray matter of the cerebro-spinal nervous system, recognized nerve structures varying in character, which he grouped into two main categories of nerve cells—cells of Type I and cells of Type II. The cell Type I (Fig. 4), as described by Golgi, agrees in the main with the general description of a central nerve cell given by Deiters, being characterized by much-branched protoplasmic processes (usually multiple) and the single axis-cylinder process. That the latter was unbranched, however, as Deiters maintained, Golgi denied, and his discovery of "side branches" upon the axis-cylinder processes, first of the pyramidal cells of the cerebral cortex, and later upon those of the Purkinje cells of the cerebellum, represents an advance of a degree of importance utterly beyond Golgi's conception at that time.*

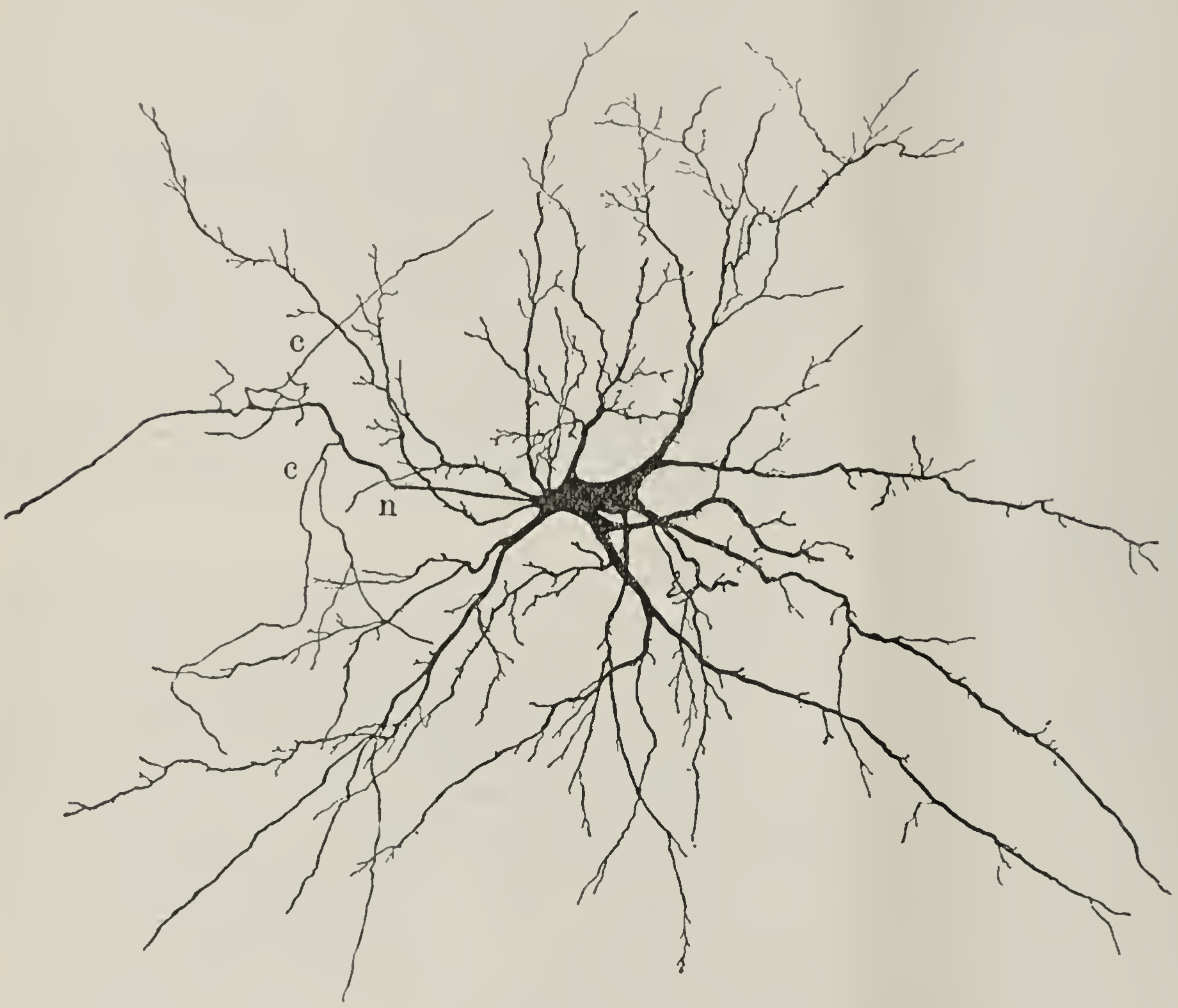

FIG. 4.—Golgi's cell of Type I. Cell from the optic tract of the cat laterad from the lateral geniculate body. (After Kölliker.) Radiating from the cell body are to be seen very many protoplasmic processes which show a broad wedge of origin and branch characteristically; the single axis-cylinder process *n* has a smooth surface and tolerably even calibre, which is maintained for a considerable distance from the cell. It gives off a few delicate lateral branches or collaterals, *c*.

These side branches given off by the axis-cylinder process of cell Type I were usually delicate, and exercised a hardly perceptible influence upon the calibre of the main fibre, which retained its individuality at least for a long distance from the cell. Golgi noted that these side branches existed also upon the motor fibres of the anterior horns, and that similar ones were given off by the fibres of the white fasciculi of the spinal cord, whence they ran into the gray matter.

The branching shows quite a different behavior, however, in Type II (Fig. 5), and indeed it is the axis cylinder which is morphologically characteristic in the two classes of cells rather than the protoplasmic processes. The axis cylinder of Type II begins to divide almost immediately after its departure from its cell of origin, breaking up in a dendritic manner into a large number of fine branches, the main process retaining its individuality and being distinguishable for a comparatively short distance (Fig. 6), and never appearing to leave the gray matter.

Not taking into account certain observations upon neuroglia, it may be said that the most important contributions of Golgi in the domain of neuro-histology † consisted in (1) the invention of the silver method of staining; (2) the recognition within the central regions of cells of different types (Type I and Type II); and (3) the discovery of lateral branches from the axis-cylinder processes.

Unfortunately, Golgi, not contented with describing these objective findings, gave utterance to a number of hypotheses, particularly with regard to certain functional relations and to the ultimate fate of the side-fibrils given off by the axis-cylinder processes, which led him and many after him into a whole labyrinth of errors. Concerning these I shall have something to say further on. For the present, it will suffice to state that Golgi believed that the cells of Type I were motor cells, and the cells of Type II sensory cells; that Gerlach's diffuse nerve network, arising from the anastomosis of protoplasmic processes and connected with sensory fibres on the distal side of the network, had no existence in fact, but that there did exist a diffuse nerve network (*intreccio*) within the gray matter * made up of the many branches of the axis cylinders of the cells of Type II and the side fibrils of the axis cylinders of the cells of Type I. Protoplasmic processes, in his opinion, possessed no nervous function, but represented simply portions of the protoplasm of the nerve cell which ran out to be connected with the blood-vessels or neuroglia cells in order to gather nourishment from them. Golgi believed that the dorsal root fibres on entering the cord branched freely and terminated by becoming a part of the diffuse nerve network in the gray matter, the sensory impulses reaching the axones of the motor fibres through their side fibrils, which were connected with the distal side of the general network. In this way the dendrites and the cell body were excluded from the reflex arc (Fig. 7). Epoch-making as were his actual discoveries, the admixture with facts of such hypotheses, involving in the supposition of the existence of a diffuse nerve reticulum the continuity of the nerve elements, served to render the nervous system as complicated and the understanding of its arrangement almost as far out of reach as did the views of Gerlach which preceded them.

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* The method now almost universally employed is the quick method in which osmic acid and potassium bichromate are used. For some researches the modification of Cox can be especially recommended.

† Such pictures afford suitable objects for reproduction by photography. Compare the beautiful Atlas of Nerve Cells, of Starr, Strong, and Leaming, New York, 1896, and the photographs by Hoen illustrating Berkley's publications.

‡ A valuable critique of the Golgi method, its nature and results, is that of A. Hill, The Chromsilver-method, *Brain*, London, vol. xix, 1896. C. Weigert has recently reviewed the technique of the Golgi method in Merkel-Bonnet's *Ergebnisse der Anatomie u. Entwick.*, Bd. v, 1895, p. 7.

* Waldeyer mentions that he himself noted the branching of the central process of the Purkinje cells as early as 1863.

† Golgi's fame as an investigator does not depend entirely upon his brilliant researches on the nervous system. His studies of the different varieties of malarial parasites transformed clinical ideas upon the subject and would alone have sufficed to make his name lasting.

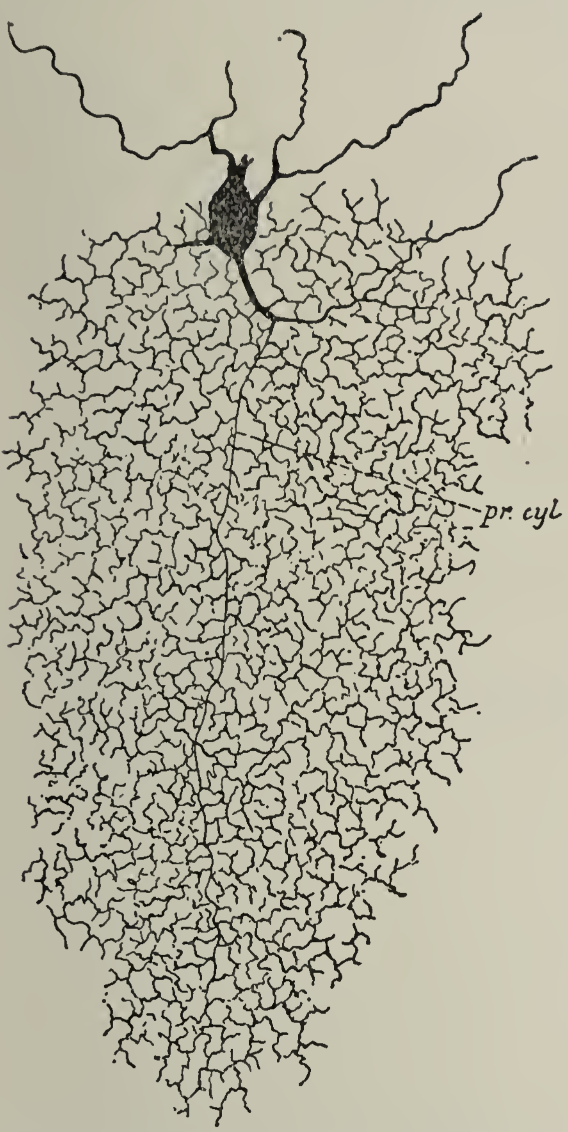

FIG. 5.—Nerve cell with short branched axis cylinder from the granular layer of the cerebellum of a cat aged eight days. Golgi's cell Type II. (After Van Gehuchten.)

The credit, I think with justice, has been given by both Van Gehuchten and von Lenhossék to His, of Leipsic, and to Forel, of Zürich, for having directed the first telling blows against the doctrine of a diffuse nerve network and in favor of the independence of the individual nerve elements. The distinguished anatomist * has since the year 1881 busied himself, in the main, with the study of the morphology and histogenesis of the nerve organs, and his results in this field may justly be looked upon as crowning in the most fitting way a life of indefatigable activity.

His investigations led him early to the conclusion that from the beginning the forerunners of the nerve cells —the neuroblasts—were entirely distinct from and independent of one another. They appear at first as oval or pear-shaped, cells with smooth cell bodies entirely devoid of processes; later, at the end of the cell originally directed away from the outside of the body, there appears a projection which corresponds to the subsequent axis cylinder of a nerve fibre. The protoplasmic processes do not appear till afterward and branch soon after their appearance. The fibres of the dorsal roots of the spinal nerves represent processes of cells situated in the spinal ganglia and their terminations lie free inside the spinal cord. In these early stages there is no anastomosis between the different processes of a single nerve element, nor could His make out in the later developmental periods any evidence of the fusion of the processes of one cell with those of another.† His, therefore, opposed the idea of a diffuse nerve network, attributing the appearances which suggested it to the existence of a most complex feltwork (neuropilem) composed of the finer subdivisions of the processes of the nerve cells.

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* Golgi has never pictured this network, and in all his writings he has spoken of it in a very indefinite manner and with great reserve. For example, in his *Studi sulla fina anatomia degli organi centrali del sistema nervoso*, Milano, 1886, p. 31, he says: "Out of all these branchings of the different nerve processes there arises, of course, an extremely complicated texture which extends throughout the whole of the gray substance. That out of the innumerable further subdivisions by means of complicated anastomoses there arises a network, in the strict sense, and not simply a feltwork, is very probable; indeed, one would be inclined from some of my preparations to believe in it, but the extraordinary complication of the texture does not permit this to be declared as certain." In a later article, La rete nervosa diffusa degli organi centrali del sistema nervoso; suo significato fisiologico (*Rendiconti del R. Istituto Lombardo*, ser. ii, vol. xxiv, 1891, pp. 595, 656). Golgi has dealt with this topic at length, replying to the objections which have been urged against the existence of the diffuse nerve network and commenting upon its physiological significance.

* The monographs of His upon the chick and his researches upon the anatomy of human embryos contain results of personal work which represent a goodly proportion of what is reliable in modern embryology.

† At the end of an article, Zur Geschichte des menschlichen Rückenmarkes, dated 1886, His says: "Als feststehendes Princip vertrete ich dabei den Satz: dass jede Nervenfaser aus einer einzigen Zelle als Ausläufer hervorgeht. Diese ist ihr genetisches, ihr nutritives und ihr functionelles Centrum, alle anderen Verbindungen der Faser sind entweder nur mittelbare oder sie sind secundär entstanden."

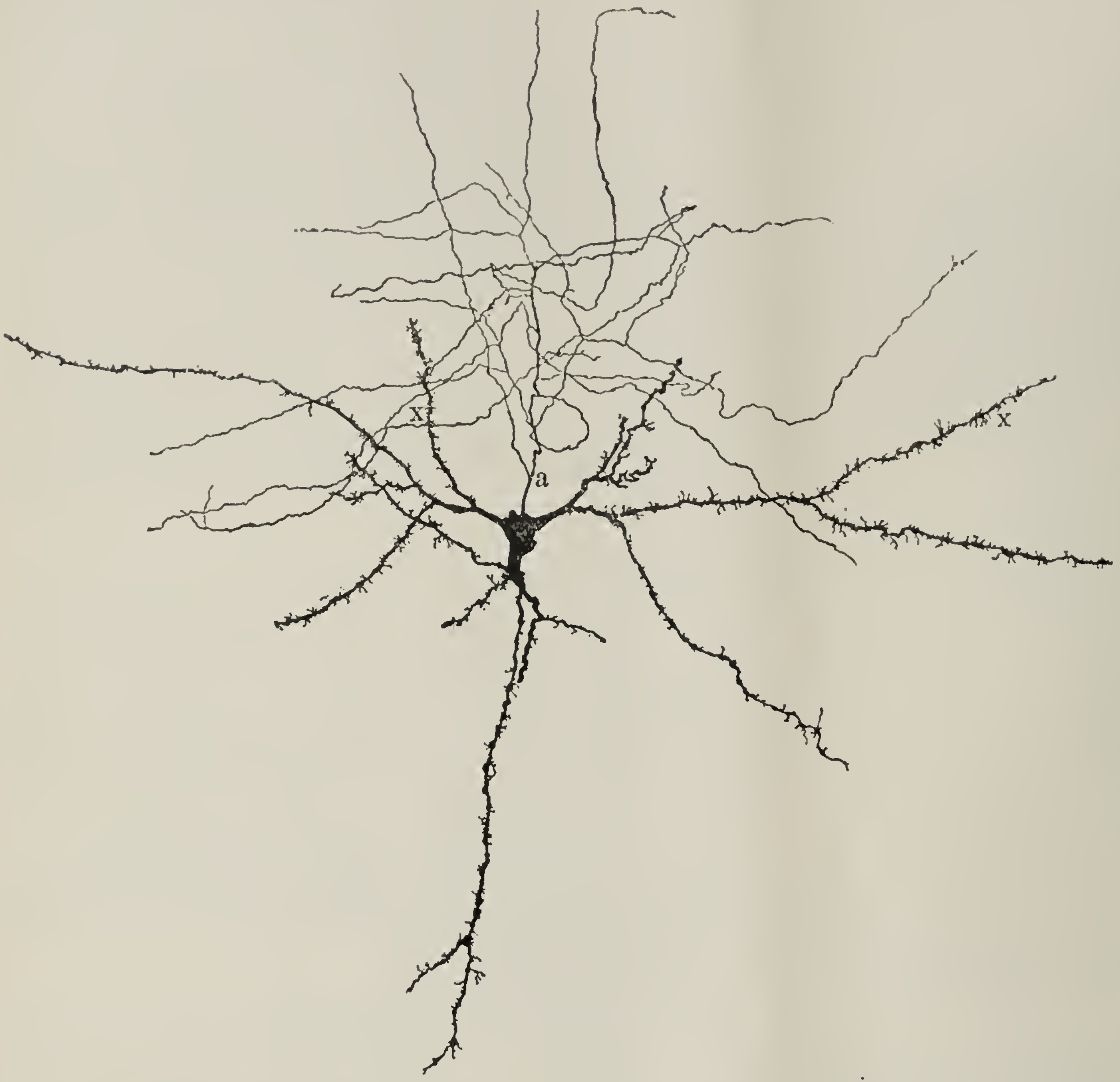

Fig. 6.—Golgi's cell Type II or dendraxone from the cerebrum of a cat. (After Kölliker.) The coarse protoplasmic processes are easily distinguishable from the axis-cylinder process *a*, though the latter soon loses its identity, exhausting itself by multiple division at a short distance from the cell.

The criticism which appeared about this time from the pen of Forel, the celebrated Zürich psychiatrist,* is of extreme value from a historical standpoint. Well versed in the results of pathological anatomy and experimental pathology, and acquainted with the earlier work of His, Forel, in a short essay, discussed the status of neuro-histology at the time, including in his criticism the results and hypotheses of Golgi. He recognized fully the importance of Golgi's objective findings, but with peculiar keenness of perception sifted out the facts from the hypotheses; he entered a strong protest against the network theory, spoke for the maintenance of the individuality of the nerve elements, and for the first time stated clearly the principle of contact as an explanation of the correlations of the nerve cells and their processes within the gray matter.

The contributions of Forel and His, well supported and convincing as they were, did not, however, suffice to eradicate the older ideas of a reticulum from minds in which they were as firmly established as are most prejudices and preconceived ideas taken in with mother's milk. To appreciate discoveries based partly upon pathological experience, but mainly upon studies in histogenesis, a field whose fruits had not yet attained the appreciation they deserved, a conservative medical world required, for its awakening, influences still more arousing. These were soon forthcoming and from an unexpected quarter.

If we may believe a popular rumor, something more than ten years ago, a young doctor in Spain, a country remarkable from a medical standpoint up to his time for its barrenness in original research, applied for a position in microscopy, which was refused him. His pride wounded keenly, he renounced his social relations, purchased a small library on histological subjects, paid special attention to certain technical methods, worked like a slave at his subject, and a decade later found himself famous. Santiago Ramón y Cajal has left Barcelona behind him and is now professor at Madrid, has lectured before international audiences, and has won the admiration and respect of the whole scientific world; he is a medical *immortel.* Beginning with two articles in the year 1888, one upon the retina of birds * and the other upon the nerve fibres of the molecular layer of the cerebellum,† Cajal exhibited during the next few years a most astonishing productive activity,‡ which, judging from the nature of his articles in current journals, is by no means yet exhausted.

A brief inquiry into the contributions of Cajal can not fail to make clear why they almost immediately attracted close attention in widely distant quarters. Leaving out of consideration the immense mass of detailed discoveries with which Cajal has enriched the finer anatomy of the spinal cord and brain, the salient features of his work, those which make it so significant as regards our present concept of the elementary structure, are (1) the demonstration (apparently definite) of the complete independence of at least the majority of the nerve elements, the branches of the axis cylinders forming anastomoses no more than those of the dendrites; (2) the appreciation of the widespread occurrence and significance of the lateral branches (collaterals) of the axis-cylinder processes; and (3) the demonstration of the striking uniformity in general structure of the majority of the nerve elements in all parts, despite multiple minor morphological variations.

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* Forel, A. Einige hirnanatomische Betrachtungen und Ergebnisse. *Archiv für Psych. und Nervenkr.*, Bd. xviii, 1887, p. 162.

* Cajal, S. R. Estructura de la rétina de las aves. *Revista Trim. de Histologia Normal*, etc., Nos. 1 y 2, Mayo y Agosto de 1888. Quoted by von Lenhossék.

† Sobre las Fibras Nervosias de la Capa Molecular del Cerebello. *Revista Trim. de Hist.*, etc., Agosto, 1888. Quoted by von Lenhossék.

‡ I have references to no less than nine articles on the nervous system bearing his name, published during the year 1890 alone. It would occupy too much space to give here a complete list of his publications. An epitome of his views is to be found in *Les nouvelles idées sur la structure du système nerveux chez l'homme et chez les vertébrés*, French by Azoulay, Paris, 1894, and in the Croonian Lecture, La fine structure des centres nerveux, *Proceedings of the Royal Society*, London, vol. lv, pp. 444–468. This lecture was delivered in French, and published in the same language. A brief but inaccurate abstract of it in English was printed in the *British Medical Journal*, 1894, i, p. 543.

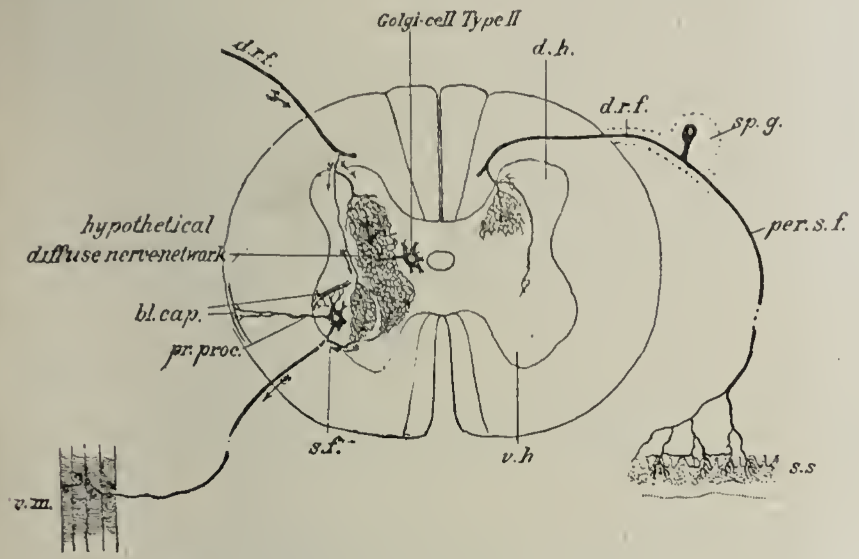

Fig. 7.—Schematic representation of the diffuse nerve network supposed by some investigators to be formed by means of the side fibrils of cell Type I and the axones of cell Type II. The sensory fibres of the dorsal root are shown entering into connection with this diffuse nerve network, and the course of impulses concerned in simple reflexes according to this view is shown by the direction of the arrows. By this means the cell body and protoplasmic processes were supposed to be excluded from the reflex arc. The dendrites were supposed to be purely nutritive in function, passing out, to be connected with the walls of blood-vessels, whence the nutrient supply was derived, as shown in the figure. All the evidence goes to show that this view is *incorrect*. *v. h.*, ventral horn of gray matter; *d. h.*, dorsal horn; *s. f.*, side fibril from axis cylinder of motor cell of ventral horn passing back into the hypothetical diffuse nerve network; *pr. proc.*, protoplasmic process of motor cell of ventral horn passing through white matter to blood capillary of the pia; *bl. cap.*, blood capillaries (1) in the gray matter, (2) in the pia, with which the protoplasmic processes were supposed to be connected or related; *d. r. f.*, fibre of dorsal root sending branches into the gray matter to terminate in the diffuse nerve network; *Golgi cell Type II*, cell in the gray matter, its much-branched axis-cylinder process helping to form the diffuse network; *sp. g.*, spinal ganglion; *per. s. f.*, peripheral sensory nerve fibre; *s. s.*, sensory surface; *v. m.*, voluntary muscle innervated by fibre of ventral root.

Golgi, as I have said, had denied the existence of a network made up of anastomosing protoplasmic processes, but believed in a diffuse nerve reticulum composed of the united fibrils resulting from the complicated subdivisions of the axis cylinders of cells of Type II and the lateral fibrils of the axis cylinders of cells of Type I. The Spanish investigator emphatically denied the existence of any such diffuse nerve network. He maintained that in the cerebro-spinal nervous system the axis-cylinder processes and their lateral branches, belonging to no matter what nerve cell, always ran out to end free within the gray matter.* They often entered into close proximity to other nerve cells and interlaced with their protoplasmic processes, but nowhere could any evidence be found of actual union—the interrelations of the nerve elements depended entirely upon contact or contiguity, not upon organic connection. This was proved to be true not only of embryonic structures, but also of the tissues of the adult, so that the neuropilem of His and the

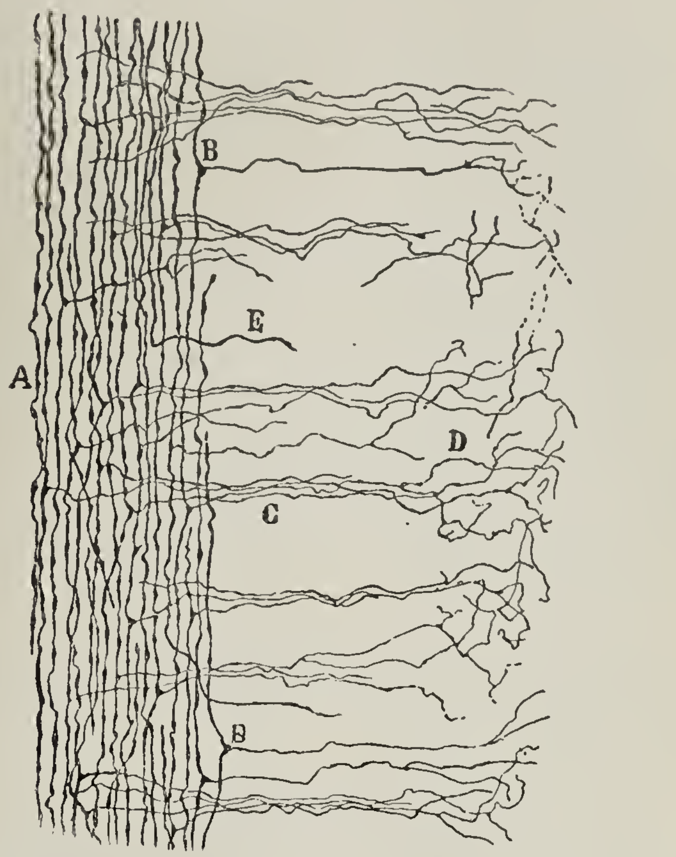

Fig. 8.—Longitudinal antero-posterior section of dorsal funiculus of the spinal cord of a cat fifteen days old. (Method of Golgi.) *A*, fibres of dorsal funiculi; *B*, collateral; *C*, group of collaterals running ventralward; *D*, end arborization of some collaterals in the gray matter of the dorsal horn; *E*, axis cylinder of a nerve cell. (After Ramón y Cajal.)

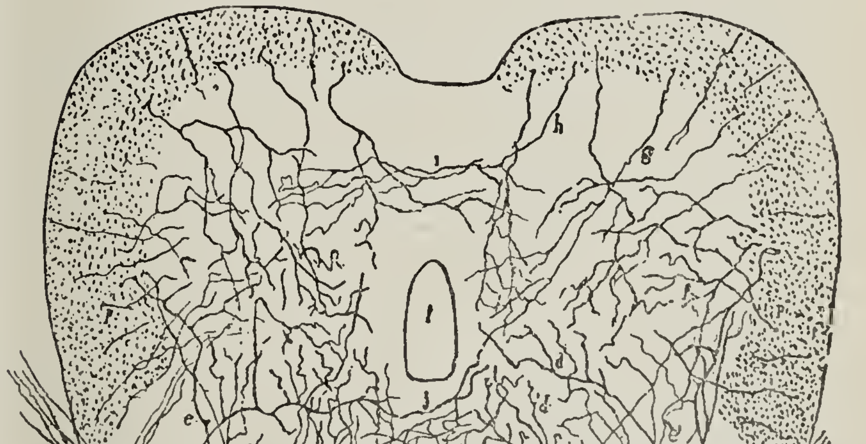

Fig. 9.—Transverse section of the spinal cord of a chick at the ninth day of incubation. (Method of Golgi.) *a*, fibres of dorsal root; *b*, collaterals from the dorsal root fibres; *g*, collaterals from the ventral funiculi; *h*, collaterals helping to form the ventral commissure; *d*, end arborizations of collaterals; *o*, collaterals going to form the dorsal commissure. (After Ramón y Cajal.)

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* In his earlier publications Cajal made certain reservations and spoke of possible exceptions, but later he denied all anastomosis between the processes of nerve cells.

contact principle of Forel met with full confirmation in the researches of Cajal.*

The side fibrils discovered by Golgi upon some of the axis-cylinder processes were made by Cajal an object of special study. Particularly fortunate in this regard was his application of the silver staining to the embryonic cord.† He found that in embryo chicks after the fifth day of incubation it was easy to stain many of the axis cylinders of the white fasciculi, but was astonished to find coming off from each fibre, with a slightly wedge-shaped origin at right angles or almost at right angles, a considerable number of fine collateral branches (Figs. 8 and 9). These collateral branches penetrated deeply into the gray matter of the cord and terminated in free end arborizations among the nerve cells and their protoplasmic processes. The fine nerve plexus, described in the bibliography as occurring about the ganglion cells, was attributed by Cajal largely to the interlacing of great numbers of the fibrils constituting these end arborizations of the collaterals. Such collateral branches occurred in all the white fasciculi, and further, they showed a tolerably constant disposition in all regions of the vertebrate spinal cord.‡ On the ventral root fibres of the chick and the calf he could find no collaterals, but concerning the fibres of the dorsal roots the most interesting relations came to light. In preparations of the cord and dorsal roots of chicks from the seventh to the twelfth day of incubation he showed that the fibre representing the centrifugal process of a cell in the spinal ganglion runs through the dorsal roots as far as the surface of the cord, into the substance of which it penetrates obliquely. Inside the cord * the axis cylinder undergoes a distinct Y-shaped division into two strong terminal branches, one ascending, the other descending, both soon assuming a longitudinal direction, evidently constituents of the dorsal fasciculi of the cord. Fine collateral branchings could be seen coming off not only from the main axis cylinder, but also from its two branches of division at different levels on their way up or down the cord (Fig. 10). These passed forward through or internal to the substantia gelantinosa of Rolando to end, some among the cells of the dorsal horns, many of them among the cells of the ventral horn. As to the ultimate fate of the ascending and descending fibres resulting from the Y-shaped division, Cajal could not at the time make any definite statement.†

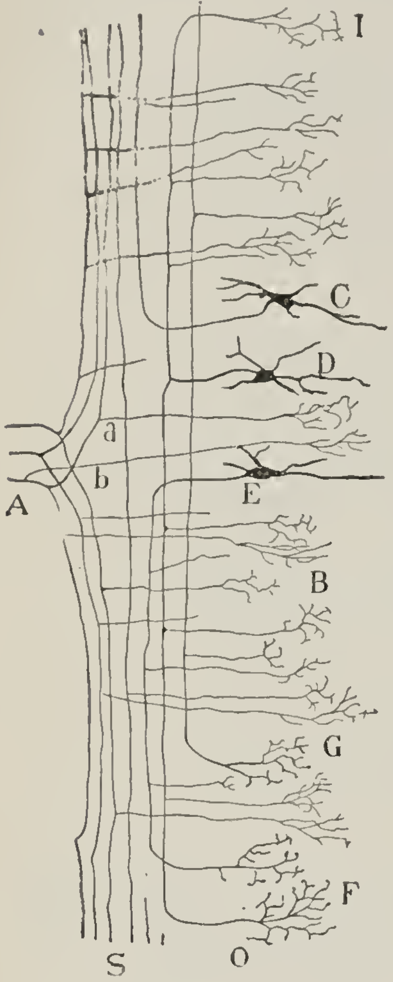

Fig. 10.—Schematic representation of section of dorsal column cut longitudinally parallel to entrance of dorsal roots. (After Ramón y Cajal.) *A*, dorsal root; *S*, white substance; *O*, gray substance; *C*, cell of gray matter sending its axis-cylinder process upward in dorsal funiculus; *D*, another cell sending an axis cylinder into the white matter; this process bifurcates, yielding an ascending and a descending fibre; *E*, another cell sending an axis cylinder downward in the dorsal funiculus; *F* and *G*, terminal arborizations of axis-cylinder processes; *B*, terminal arborizations in the gray matter of collaterals from the white substance; *a*, collateral from one of the divisions of a dorsal root fibre; *b*, collateral from the main trunk of a dorsal root fibre before its Y-shaped division.

(To be continued.)

APPENDICITIS:

WHEN TO OPERATE AND HOW TO OPERATE.‡

By PARKER SYMS, M. D.

Appendicitis may be defined as a disease more or less widespread, which has its origin in an inflammation of the appendix vermiformis.

It may be limited strictly to the appendix, or it may involve the neighboring peritonæum.

It may result in a general peritonitis, or in general peritoneal sepsis, or in general septic poisoning by infection through the neighboring veins.

It is not within the scope of this paper to go fully into the pathology of appendicitis. I shall merely outline the various conditions which obtain in the different forms of the disease, and then set forth what my experience has taught me as to the best plan of treatment in a given case.

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* The researches concerning plasma bridges have not yet, I believe, been extended to the nervous structures.

† Ramón y Cajal, S. Sur l'origine et les ramifications des fibres nerveuses de la moelle embryonnaire. *Anat. Anz.*, 1890, v, pp. 85, 111.

‡ As to the nature of the collaterals, Cajal says (*op. cit.*, p. 90): "Que représentent ces fibrilles collatérales que nous venons de mentionner? À notre avis, il s'agit probablement de fibres de connexion cellulaire que tous les tubes de la substance blanche envoient à la grise à fin de mettre en contact réciproque des corpuscules nerveux placés relativement à de grandes distances. L'absence de myéline au niveau des contacts (corps des cellules et arborisations des collatérales) faciliterait particulièrement la communication de l'ébranlement nerveux."

* Cajal (*Anat. Anz.*, 1890, v, p. 92) says, "Dans l'épaisseur de la région du cordon de Goll." This should probably read "Cordon de Burdach."

† Through a combination of the results attained by Golgi's method and by the methods of secondary degeneration and Flechsig's embryological method, we have now tolerably accurate ideas as to the course and destiny of the fibres of the dorsal white fasciculi of the cord, their relations to the gray matter of the medulla spinalis and that of the medulla oblongata. Von Lenhossék has made an extremely careful study of the various groups of collaterals pertaining to these fibres, and has given us in a monograph (*Der feinere Bau des Nervensystems im Lichte neuester Forschungen*, zweite Auflage, Berlin, 1895) a most interesting and reliable *résumé* of the facts at present known about the finer anatomy of the cord, including the results of his own brilliant researches upon the spinal cord of human beings. Ramón y Cajal's treatise (L'anatomie fine de la moelle épinière; Lieferung iv of Babes's *Atlas der path. Histologie des Nervensystems*, Berlin, 1895) may also be consulted in this connection.

‡ Read before the New York Medico-surgical Society, March 1, 1897.

All cases of appendicitis I classify under two heads: First, benign; second, malignant. These may be subdivided thus:

BENIGN.

Acute, primary.

1. Simple catarrhal, with or without concretion.
2. Parietal, involving all the coats.
3. Parietal, with local adhesive peritonitis.

Chronic.

1. Recurrent.
2. Relapsing, with concretion, stenosis, or foreign body.

MALIGNANT.

1. Acute suppurative, with local fibrino-purulent peritonitis, by extension or perforation.
2. Acute suppurative, with progressive fibrino-purulent peritonitis, by extension or perforation.
3. Subacute gangrenous, with localized fibrino-purulent peritonitis.
4. Suppurative, with retro-cæcal cellulitis.
5. Gangrenous, with retro-cæcal cellulitis.

Fulminating: 1. Acute purulent, with perforation and general peritonitis or peritoneal sepsis. 2. Acute gangrenous, with perforation, general peritonitis, or peritoneal sepsis.

Any benign appendicitis may become a case of any of the forms of malignant appendicitis.

This is more frequently demonstrated in the recurrent and relapsing forms. The question is really one of degree of severity rather than one of variety of diseased condition.

It is my rule to *insist* upon operation in any one of the varieties which I have classed as malignant, and to advise operation in the recurrent and relapsing cases, unless there is some special condition of the patient which would contraindicate an operation on general principles.

In these cases I always operate between the attacks, and long enough after an attack to avoid operating through an infected and inflamed area.

Every acute case of mild severity may be treated expectantly with the hope of checking the disease before it becomes one of malignant type.

Any case in which there is not rupture or perforation of the appendix, and in which there is not purulent peritonitis, may completely recover.

This is true of cases with adhesive peritonitis, when there is a perceptible tumor; but it is not true of cases in which there is a periappendicular abscess.

Now comes the important part of this subject—namely, how is one to determine from the clinical evidences of a case of appendicitis just what the local pathological conditions are? This is a most difficult problem to solve. for the symptoms are not always in keeping with the severity of the disease.

Many cases of mild appendicitis are attended by very severe symptoms; while many of the most grave cases give rise to very slight symptoms. This latter is particularly true of the most malignant type—namely, the fulminating variety.

In the beginning of such an attack, symptoms may be even less significant and severe than in a case of catarrhal or simple parietal appendicitis. There is no local peritonitis, no tumor, and perhaps the only symptoms will be pain and tenderness in the right iliac fossa, slight rise of temperature, and slight acceleration of pulse rate; in fact, the symptoms may clearly point to a mild attack until perforation or rupture takes place, and when severe symptoms first appear, it will be to announce a condition that is already beyond hope of cure.

In considering this question the physician will naturally be guided by his own experience; but he should always give careful heed to the lessons others have learned. It is very desirable that this subject should be regarded too seriously rather than too trivially. If a physician has been fortunate enough to have been limited in his experience to a number of cases of the benign type, he is apt to have formed the idea that all cases of appendicitis may recover without operation, and a patient with a malignant form of the disease is very unfortunate if he comes under the care of that man. Fortunately, there are to-day few practitioners so narrow-minded and ignorant.

The real danger in cases of appendicitis is that the operation shall not be done when necessary; and that an operation may be done in a case which would have recovered if treated expectantly is not a matter of much importance, for if the operation be properly done, the risk to the patient is almost *nil.* In appendicitis the danger lies in the disease, and not in the operation.

It is of the utmost importance in acute cases calling for surgical interference that operation be done as early as possible. In a case of acute suppurative or gangrenous appendicitis the patient's chance of recovery is much greater if operation can be done before perforation or rupture has taken place, even if protecting adhesions are formed, and, of course, if these are not present when the breakdown comes the chance of recovery is very small.

I know of no question more difficult to decide than the one which presents itself in the early hours of an acute appendicitis—namely, is it the beginning of a benign case, or is it the beginning of a malignant one?

This is a question that can not be answered in many instances, for in the two forms the onset is the same.

In some cases the local and general symptoms are so severe or significant from the beginning that there can be no doubt that the case is one of a severe and dangerous type. But the converse of this is not true, since one can never predict in a case that has a mild beginning that it will not have a serious ending.

In such cases one can only decide on the proper plan of treatment by making repeated examinations, and noting the progress or regress of the disease.

As a general rule it may be stated that a patient that is not decidedly better at the forty-eighth hour than at the twenty-fourth is not going on to spontaneous recovery.

General practitioners frequently put surgeons to a great disadvantage by not calling them in consultation early enough to allow them the benefit of making an early and then a later examination, and thus comparing the conditions. Too often the surgeon is called upon to decide a one-sided question. He can work to better advantage for many reasons if he sees the case early. His judgment can be soundly formed, his knowledge of the case from its early stages is of importance, and, when operation does become necessary, it can be the better accomplished if it has been anticipated and prepared for than if it be undertaken on the spur of the moment, perhaps at night, and without time for the best arrangement of details.

A typical attack of acute appendicitis will have about the following symptoms: A sudden onset, usually beginning with abdominal pain, starting around the umbilicus, and becoming more or less general, and finally becoming most intense in the region of the right iliac fossa. This may or may not be attended by vomiting. Soon there will be slight elevation of temperature, about 100° F., and acceleration of the pulse rate to about 90.

The most characteristic symptom is tenderness, with its seat of maximum intensity at the appendix. There is always a change in facial expression, varying from a slightly anxious look to a well-marked Hippocratic face.

Muscular rigidity will soon be present, especially in the right rectus abdominis.

All these symptoms may be present to a greater or less degree in the mildest case of catarrhal appendicitis. In the most severe of all cases—namely, the acute gangrene without peritonitis—there may be no symptom present before rupture save point tenderness, muscular rigidity and accelerated pulse.

After an acute case has progressed a few hours, if local peritonitis is produced, either the simple plastic or the fibrino-purulent, a distinct tumor will be present in the neighborhood of the appendix. This may be obscured by the rigid muscles.

No fixed rule can be laid down for deciding in the early stages between the mild and the severe cases.

No man is capable of deciding this question positively and correctly in all cases. Ample and widespread experience with the various types of the disease will give one a faculty of determining the nature of the condition which may almost be called intuitive.

An exact and true word picture of a given case of simple catarrhal in the first thirty-six hours might fully and accurately describe a given case of the fulminating type; but to one properly experienced, an indescribable character of some one symptom, as the pulse or facial expression, may indicate a malignant process. Usually a catarrhal or simple parietal appendicitis will present a mild train of symptoms from the start, and under the proper expectant treatment will show marked improvement in some or all of the symptoms by the forty-eighth hour.

At this time, in the majority of cases of suppurative or gangrenous cases with local peritonitis, "tumor," pain, and vomiting will have ceased, and the evidences present will be as follows: Temperature about 100°; pulse about 100; muscular rigidity, tumor well marked, hard, defined, and increasing; local tenderness now over site of tumor. Facial expression more or less anxious.

A gradual abatement of these symptoms will point to a regression of the disease. A sharp rise of temperature and acceleration of pulse rate, followed by a sudden fall of temperature and a sudden decrease in the pulse rate, usually marks the rupture or perforation of an appendix into firm adhesions.

During an attack of appendicitis a sudden cessation of symptoms is always a bad sign.

A fulminating attack of gangrenous, or suppurative appendicitis may have about the following symptoms marking three stages:

First. The stage before perforation. Temperature, 103°; pulse, 120, high tension, small volume; pain localized, severe, lancinating; tenderness exquisite; facial expression anxious, haggard; respiration, 30 a minute, costal variety; vomiting reflex in character. General feeling of severe illness.

Second. The stage of rupture, short in duration, sudden in advent. Temperature normal or subnormal; pulse, 80; pain gone; tenderness slight; facial expression much improved; respiration normal; vomiting none. General feeling of relief and recovery.

Third. The stage of general septic peritonitis or sepsis. Temperature about 101° to 102°; pulse, 110 to 120, small and weak; pain severe, general abdominal; tenderness, general abdominal, with maximum at appendix; facial expression Hippocratic; respiration costal, rapid, irregular; vomiting may become stercoral. Great exhaustion and prostration.

Finally, collapse and heart failure will close the scene.

It must be borne in mind that a fulminating case may cause death by peritoneal sepsis without the production of septic peritonitis.

It is most unfortunate that no well-defined rule can be given for determining which is a benign case and which is a malignant one. This has to be decided by one set of symptoms in one instance, and on entirely different grounds in another. In one case the character of the pulse is most important, in another the temperature may decide the question, but usually one must judge by the patient's general condition, and by a careful study of all the symptoms, and of the relation of one symptom to the others.

Concerning the treatment of appendicitis the cases may be classed in three groups:

First. Those in which operation is unnecessary and in which expectant treatment should succeed.

Second. Those in which operation is advisable and justifiable, but in which delay may not do harm.

Third. Those in which operation is imperative, and is the only safe method of treatment.

The first group is limited to the cases of primary catarrhal and primary parietal appendicitis without suppuration and without gangrene.

The second group embraces all cases of recurrent and relapsing appendicitis.

The third group embraces all the forms of appendicitis which I have classed as malignant—*i. e.*, all cases of suppurative or gangrenous appendicitis with peri-appendicular abscess and the fulminating type.

Before leaving the first group, let me set down briefly the proper method of expectant treatment:

Put the patient to bed and keep him there. Apply over the whole of the right iliac region a soap "poultice," consisting of a thick layer of green soap spread on a single thickness of muslin or sheet lint.

Over this apply a broad ice bag—better still, an ice coil.

Relieve the bowels by a soap-and-water enema.

Keep the stomach at rest while vomiting exists.

Restrict the patient to milk, if he can take it; if not, give him clear broth.

Note the temperature, pulse, and respiration every four hours.

Give no drugs.

Never give opium or morphine in cases of appendicitis, except in case of abdominal shock from rupture of appendix or abscess.

Any case that does not improve under this plan of treatment will be found to be of one of the severer types.

The operative procedures may be described as pertaining to four classes of cases.

First. Cases of recurrent and relapsing appendicitis, without acute local peritonitis between attacks.

Second. Cases of acute, suppurative, or gangrenous appendicitis with local peritonitis, with or without peri-appendicular abscess.

Third. Chronic cases with persistent sinus.

Fourth. Fulminating appendicitis with rupture or perforation and general peritoneal involvement.

There are certain general rules which apply to all of these forms of operation. I shall touch on those at once, and then take up the special indications and procedures.

I always insist upon having one of my own assistants when it is possible to do so. I consider that the man who has charge of the protecting sponges and packings is of more importance than the one who does the operating.

I also prefer to have a nurse who has been accustomed to my method of operating.

The entire abdominal surface should be sterilized as completely as possible.

A proper operating table is very necessary. The Trendelenburg posture should not be used.

Hand sponges and flat laparotomy sponges should be made of sterilized gauze. For catching and removing the pus, I use very small marine sponges on holders.

The patient should be slowly and carefully anæsthetized. This is very important.

A careful final examination should be made when the patient is thoroughly narcotized and the muscles are relaxed.

The operation should be done deliberately and carefully, but with all compatible speed.

We shall now take up the special form of operation.

First. For relapsing and recurrent appendicitis without acute local peritonitis.

The propriety of operating on these cases must depend on the nature of the attacks, the frequency of the attacks and their severity, the amount of disability they cause the patient, and the patient's condition of general health—that is to say, whether he is a fit subject for an operation or not.

In a patient of good general health and vigor this operation is free from danger.

After the patient has been thoroughly anæsthetized, the skin properly prepared, the whole operation field properly protected by sterilized coverings, and the final examination made, the operation is done as follows:

An incision is made down to the external oblique muscle. In a thin subject this incision may not need to be over an inch and a half in length. It must correspond to the thickness of the abdominal wall. It should be in a direction parallel to the fibres of the external oblique. Its middle point should be on a line drawn from the umbilicus to the anterior superior spine of the ilium. It should be external to the rectus muscle.

Next, the external oblique should be opened, by separating its fibres, not cutting, as far as the full length of the above incision. With this wound carefully held open the internal oblique should be cut, not split, in the same direction as the wound. The transversalis is divided in the same manner.

When the peritonæum is reached it should be lifted by two mouse-toothed forceps and divided, such care being taken as to positively insure against wounding the intestine, whether there be any adhesion or not. Of course, before opening the peritonæum all bleeding should be arrested and the wound thoroughly dried.

When the peritonæum has been sufficiently opened the index finger is introduced and the region of the appendix explored. If many adhesions are found, the entire wound should at once be so enlarged that the necessary separating and dissection can be done with facility and in plain view.

If this is not the case, the appendix should be sought for, and, if it be free, its tip should be brought out of the wound. Then, as you come to its mesentery, it should be ligated with fine catgut and divided. The mesentery will require one or several ligations, according to its width.

When the appendix is separated from the intestine, except at its base, it and a portion of the intestine should be brought out of the wound, so that the ablation can be done extraperitoneally. I pass the appendix through a hole in the centre of a flat sponge, so that a very small surface of the intestine is exposed.

I prefer Dawbarn's method of closing the intestine, which is done as follows: A purse-string suture of fine silk is passed completely around the base of the appendix, about a quarter of an inch from the orifice of the appendix, involving only the peritoneal coat, the ends left untied.

The appendix is now cut off about half an inch from its base. Its canal is now probed to see if it be pervious. If not, it is made so by means of a small cautery point, and next the divided end of the appendix is grasped by a fine thumb forceps and pushed into the bowel by a complete invagination. The silk suture is now half tied and drawn tight. As the forceps is withdrawn the closure is complete and the full knot tied.

If all this has been carefully and satisfactorily done there will be no infection. The wound may be closed at once.

I close the wound by a single row of silkworm-gut sutures passed through the entire wall. Simple pad dressing.

I do this operation as an aseptic one, using no fluids after the final cleansing. The operation will take from fifteen to twenty minutes to perform.

I do not believe in McBurney's method of splitting both the internal and external obliques. It necessitates a larger wound, and it requires an unnecessary damage to the abdominal wall, for it means a tearing apart and separation of its layers. I strive as far as possible to keep the various layers in apposition.

The after-treatment of these cases is very simple—*i. e.*, fluid diet for four days; enema daily; stitches removed on the seventh day; first dressing removed on seventh day; patient up and well on ninth to fourteenth day.

I never have a patient wear an abdominal supporter unless the wound has necessarily been unusually long.

Second. Operation for acute, suppurative, or gangrenous appendicitis with local peritonitis, with or without peri-appendicular abscess.

After the above-described preparation of the patient and operation field an incision is made similar to the one above described, but it must be extended at each end, and should be at least four inches in length.

The external oblique is opened by blunt dissection; the rest of the layers should be clean cut, and care should be taken not to separate one layer of the wall from another. If the aponeurosis and fascia are stripped bare they are very apt to slough, and thus leave a weak wall.

The essential part of this operation consists in the intraperitoneal work in searching for and treating the abscess, if one exist, and in searching for and dealing with the appendix if there be no abscess.

The most important thing of all is the protection of the uninvaded peritonæum. This requires the exercise of sound judgment to determine how much to do, and of knowledge and skill to do it properly.

As soon as the peritonæum is opened sponge packing should be begun.

Throughout the operation this must be done in such a manner that no infected tissue nor disease product can come in contact with healthy peritonæum.

The first assistant must take entire charge of this.

When all the open spaces around the mass of adhesions have been completely closed by dry gauze pads, the wound should be well retracted and the tumor gently entered by separating adhesions and by blunt dissection. When an abscess is reached I make a pin-hole opening, and at once prevent the escape of pus by pressure of a small sponge held in an artery clamp. After a minute the sponge is replaced by a clean one and the pus is removed drop by drop, all of it being absorbed by these sponges and none of it allowed to escape into the wound.

After pressure is sufficiently reduced by emptying the abscess the opening is gradually enlarged, and finally the cavity can be thoroughly sponged out.

Now it should be freely opened and its interior disinfected with hydrogen peroxide. The size of the abscess will depend upon the duration of the disease.

Its walls are composed of adherent intestines thickly coated with plastic lymph, and the ruptured or perforated appendix usually forms some part of this wall.

We have now reached the point when the average of the results will depend upon the judgment of the operator. If he is wise, he will remove the appendix in only those cases in which it can be readily found and removed without separating many adhesions. If he is rash, he will unduly persist in his manipulations, and in many cases he will break through Nature's safeguard at some point unseen and cause the death of his patient by secondary infection.

If the appendix can with safety be removed, it should be separated from the intestine with great care and gentleness, its mesentery properly ligated; then it should be ablated about a quarter of an inch from its base, and the canal thoroughly sterilized with the cautery.

Now a single ligature of catgut should be tied around the appendix, including all its coats, then the superfluous stump beyond this ligature trimmed away with the cautery or scissors. Now the operator should thoroughly resterilize his hands, and all towels, etc., about the wound should be replaced by clean ones. One or two sutures may be used at each end of the wound, but an ample opening must be left, for the wound must be treated by packing.

Remember that in packing a wound for drainage you must not proceed as you would if you were calking a ship to prevent leakage.

These wounds, whether the appendix has been removed or not, should be packed as follows: One piece of iodoform gauze, folded longitudinally, is passed to the bottom of the abscess cavity and brought out of the wound, and turned to the outer side of the wound.

It should be large enough to completely fill the cavity, but not to stuff it. Now, as the first assistant slowly removes his gauze pads they should be replaced by pads of iodoform gauze which must be carefully protected from any contamination.

These pads must completely close any spaces where adhesions are wanting, and they must come in contact with healthy peritonæum and separate it from all infected areas.

Careful note must be kept of the number of pieces used. Now the entire wound should be covered by first a pad of iodoform, and then several pads of plain, sterilized gauze; flat ones are the best. These should be firmly held by strips of adhesive plaster. Over this a thick layer of absorbent cotton is placed and secured by an abdominal binder.

In case the operation is done before the appendix has broken down, and there is no circumappendicular abscess, the procedure should be the same as the one just described; but the appendix can be removed in nearly all instances.

The after-treatment of these cases is most important. It should be as follows: Complete rest of the stomach for twelve hours. Peptonized milk in small quantity after twelve hours, if there is no nausea or vomiting.

Patient should be kept quiet on his back for four days.

Enema of soap and water every day; if there is much tympanites, turpentine should be added.

The outside dressing should be removed at the end of twenty-four hours, and changed as often after that as it becomes saturated.

The packing should not be removed until the fifth day —that is, on the fourth day after operation.

This needs be done as carefully as the operation itself. Retractors should be used and the wound well opened.

Then the gauze should be removed from the tumor cavity. This should be thoroughly cleaned by dry sponging. No fluids should be used. Now this cavity should be carefully repacked, and then the protecting pads should be gently separated from the adhesions they have caused and new pieces substituted.

After this the wound should be dressed every third day. Soon a single packing will be sufficient, and this should be reduced in size at each dressing. The patient should be kept on fluid diet for one or two weeks, and be kept in bed until the wound is healed to a narrow sinus, which it will be in from three to five weeks. When the patient gets up he should wear an elastic binder for one year to prevent hernia.

No drug treatment will be needed. I insist on my rule concerning morphine. These patients will be comfortable and free from pain if they have not been reinfected at the operation, unless the case were already one of progressing peritonitis.

Third. Chronic cases with persisting sinus. Of this operation I shall write briefly. I make an oval incision which shall include the sinus; the next step is to enter the general peritoneal cavity at some point free from adhesions. Now the intraperitoneal dissection is begun, and the mass containing the sinus is slowly separated and pushed outward, while the healthy intestines are pushed toward the median line, and ample gauze packing is interposed. The sinus will usually lead to a diseased appendix.

The entire diseased mass should be dissected and removed without opening the sinus or appendix, except, of course, when the latter is amputated.

The appendix stump should be closed by Dawbarn's method, and if the wound has not been subjected to contamination it may be closed by suture. If there be any doubt about this, it should be packed and drained.

Fourth. Operation in fulminating appendicitis, with rupture or perforation of appendix, with general peritoneal involvement.

This operation must accomplish removal of the appendix and of all infective material, and the cleansing toilet of the entire peritonæum.

When the diagnosis of this condition is positive, a large median incision should be made. The right iliac region should first receive attention. If the appendix is still attached, it should be removed and the stump secured. If the appendix has sloughed off, the intestinal orifice must be closed.

With one hand in the abdomen, a separate opening in this region should be made for special drainage.

Now every portion of the visceral and parietal peritonæum must be cleansed by thorough sponging, which shall remove all inflammatory products and all foreign material. After this is done, every portion of the peritoneal surface must be washed again and again with hot salt solution (6 to 1,000).

If the patient's strength will permit it, the intestines should be systematically, coil by coil, washed outside of the abdomen.

The work *should* be done thoroughly; but it *must* be done rapidly, for these patients are always in a bad condition.

Often you will be obliged to be incomplete in your work to avoid death on the table.

After the cleansing is accomplished gauze packing should be used so as to drain the entire abdominal cavity.

Enough suturing should be done to prevent escape of the intestines into the dressings.

A very large dressing must be applied externally; this should be changed in a few hours.

In these cases opium is called for to relieve the pain and as a stimulant against shock. A full dose should be given before operation.

Acting in the main on the principles set forth in this paper, I have been operating in cases of appendicitis during the last eight years. Of five cases with general peritonitis I have lost three patients.

I have lost no other patient with appendicitis.

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THE TREATMENT OF ABSCESS
IN CONNECTION WITH TUBERCULOUS JOINT DISEASE.*

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It appears from most that has been written upon the question of the treatment of abscess in connection with tuberculous joint disease and from the methods suggested, that the true condition in such cases has not been fully recognized; such an abscess being treated, as a rule, as a local condition, differing in no essential feature from an acute pyogenic abscess. At least, no difference has been recognized as being of sufficient importance to suggest a different method of treatment, and usually some operative procedure is advised.

When serious consideration has been accorded the ætiological factor in tuberculous abscess, the argument has been that when such an abscess was left undisturbed for any considerable length of time the risk of general tuberculous infection was greatly increased. Sepsis has also been an important, perhaps the most important, consideration in the treatment of such abscesses, and the operations are done in most instances for the relief of that condition, which in a great majority of cases does not exist. During a service of several years at the New York Orthopædic Dispensary and Hospital, where a non-interference plan is carried out in the treatment of tuberculous abscess, I have seen many abscesses develop, increase, and, in some instances, to a large size, and exist for months or even years, when they would disappear by spontaneous absorption, or open spontaneously and discharge for a time, without the slightest effort on the part of the surgeon to interfere with their course by any operative procedure.

There were no symptoms of septic infection in these patients in most instances, their temperature did not indicate it, nor did the condition of their general health. On the contrary, in the great majority of instances their diseased joints responded to the mechanical protection afforded them quite as readily and the condition of their general health was quite as good as in patients suffering from the same disease in connection with which abscess did not exist.

Thus I realized the fact that abscess in connection with tuberculous joint disease is a very different process from that of an acute pyogenic abscess, producing different symptoms and having a different cause, and that no treatment could be most rational that was not directed toward relieving the cause—the local tuberculous inflammation.

It seems unreasonable as well as unfair to the patients to assume because these two conditions have one feature in common, and in most instances but one—a fluctuating tumor—that they are practically the same, both local conditions, with similar causes, easily removable by any one of many operative procedures advised for their treatment, such as simple incision, incision and curettage, etc. In the case of the acute pyogenic abscess such operations meet every indication for treatment, while in that of the tuberculous abscess, as a rule, they do not meet one.

There is an essential difference between the contents of a tuberculous abscess and the septic material (pus) contained in an acute pyogenic abscess.

"A collection of pus in a cavity, the result of a morbid process" (Dunglison), is one thing, but a collection of non-septic material in a cavity, the result of a tuberculous inflammation, is quite another.

It has been demonstrated by many observers—Cheyne, Warren, Alexander Ogston, and others—that most tuberculous abscesses are absolutely sterile (some state that all are); that is, that they contain no pyogenic bacteria.

Alexander Ogston (*British Medical Journal*, November 12, 1881) reported the results of the examination of a series of abscesses, eighty-two in all. Thirteen were cold abscesses having a duration of months and occurring in connection with chronic caries of bone, etc. In none of these were there any organisms. Four, somewhat chronic (lasting weeks), following diseases allied to, or complicated with, forms of blood poisoning, all contained micrococci. Sixty-five were acute, and every one contained micrococci. None of these abscesses had been opened, and the pus was taken with a needle with the greatest care. To ascertain the influence of the pus alone he injected from one to ten minims of the pus from the cold abscesses into the backs of guinea-pigs, white mice, and wild mice in twenty instances, with the invariable result that no illness or abscess resulted. Within a week the pus was dried up into a film pervaded with living cells, and within ten days this film became totally absorbed, so that when the animals were killed no trace of it remained, and the site of the injection was undiscoverable. In every instance well-marked disease was set up where injections were made from the pus of acute abscesses. The conclusions that must be drawn from such observations as these are confirmed by clinical observations.

There is not the acute character of the symptoms produced by these abscesses that would be expected where pyogenic organisms are at work. High temperature, as a rule, and rapid formation and burrowing are not found.

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* Read before the Southwestern Kentucky Medical Association, May, 1896.

A careful study of the temperatures of patients suffering with tuberculous joint diseases, being treated by the same methods, shows that the temperature in abscess and non-abscess cases is about the same. In the abscess cases that have not been interfered with, and in which the joints have had efficient mechanical protection, it has been found that the temperature was practically the same during the formation, after opening and while discharging, and after the closure or absorption of the abscess; the rectal temperature, as a rule, ranging from 99° to 100° F. in the morning to 100° to 100.5° F. in the evening.

Where, then, are the indications for opening such an abscess when there is no condition that can be relieved by that opening that will compensate for the new and changed condition set up by such treatment?

Any operation which falls short of the entire removal of the disease converts a sterile condition into one where the difficulties of Nature in preventing the growth of the tubercle bacillus and preserving the patient's general health are greatly increased. The traumatic effect of the operation in lowering the vitality of healthy structures, rendering them less able to resist the spread of the disease, is illustrated by the many cases of tuberculous joint disease that are seen, which remain inactive for years, when upon the receipt of an injury they light up again with all the vigorous symptoms of the acute and typical process. The occurrence of pyogenic infection, which follows operations in so many instances, and often works the beginning of a long septic process, is another important factor in rendering the condition more favorable to the growth of the tubercle bacillus. Not only do the products of the growth of these organisms (pyogenic) affect the vitality of the healthy structures with which they come immediately in contact, but their absorption lowers the general health of the patient. So, aside from the septic condition produced by these organisms, which is serious in itself, the local tuberculous disease makes more rapid progress when they are present than when the skin is unbroken and the abscess contents are sterile.

If in a certain number of instances rapid infection of other organs occurs as a result of an operation, as undoubtedly happens after some cases of resection in hip disease, it is reasonable to suppose that in others the disease is disseminated, but the deposits occur in less sensitive and important tissues where a greater length of time is required for the characteristic symptoms to be produced, and, from the very fact that some time elapses before the symptoms appear indicating the involvement of other structures, it is very probable that the operation, though an important factor in the course of the spread of the disease, will be lost sight of as such.

It seems reasonable that such disastrous effects as have just been mentioned would occur more frequently in cases where less complete operations are done for abscesses, when no attempt is made to remove all foci of the disease.

The many patients that are seen with abscess in connection with tuberculous joint disease that exists uninterfered with for months or even years, without the slightest evidence of the spread of the disease or of septic infection (the joint having efficient mechanical protection), illustrate how well Nature, undisturbed by operative procedures, can and does protect healthy structures from infection from the contents of such an abscess. Our knowledge of Nature's method of securing this protection may not be accurate or complete, but this does not alter the fact that such protection is secured, and that any method of treatment, whether operative or not, which interferes with that process, without substituting a better one, is not the best. This method is explained, to some extent, by pathological demonstration. Warren, of Boston (*Surgical Pathology*), says: "The walls of such abscesses have a characteristic appearance, being covered by the so-called tuberculous membrane, described originally by Volkmann. This opaque membrane is several millimetres thick, and is of a violet-gray or yellowish-brown color, and is very feebly vascular on its inner surface, which comes in contact with the pus. It contains innumerable clusters of miliary tubercles, so that it often appears to be formed by them. These are supported by a matrix of coagulated fibrin. This membrane can easily be scraped off with the finger, or even be removed by a stream of water, and frequently during operations it peels off from the surface in sheets several inches square. Below this membrane there is found a fibrous, indurated tissue which separates the abscess from the surrounding healthy parts. This tissue is the result of a slight reactive inflammation and contains no tuberculous material." Senn (*Manual of Bacteriology*) says that "the granulation tissue produced by the chronic inflammatory process caused by the tubercle bacillus must be considered in the light of a protective wall to the surrounding healthy structures." In over a thousand cases carefully examined by Volkmann, on two occasions only did he find tubercles involving the surrounding healthy tissues.

While the course of a tuberculous abscess in connection with a joint under good mechanical protection is usually slow and unattended by acute symptoms, there are seen some cases, not many, in which there is a rectal temperature ranging from 100° to 101° F. in the morning and 101° to 102° F. in the evening for months, and in such instances the question of septic infection and the advisability of an operation suggest themselves. In the majority of instances such patients do not have the general appearance and characteristic symptoms that would be expected in septic cases of such long standing. Their appetites are usually good, and their general health does not seem to be affected more than can be explained by the existence of the tuberculous disease. These are the cases that it is most difficult to leave alone. One is very prone to feel that the existence of the fluctuating mass (the abscess), which is in connection with the diseased joint, is causing the trouble and adopt operative measures for its immediate relief, forgetting for the time the active tuberculous disease which is back of the abscess and entirely responsible for its existence, and upon the relief of which depends the relief of the abscess as well as other of its symptoms. It is difficult to understand how anything can be gained by opening the abscess in such a case, if the diseased joint is efficiently and constantly protected. If any operation is done which falls short of removing all the diseased tissues present, there is simply an avenue of communication opened up between the diseased joint and the external surface. The activity of the underlying disease will not be lessened or its course shortened by such treatment.

The size and location of such an abscess, unless the functions of vital organs are being interfered with (and this seldom occurs), are of little importance, the slow formation and gradual development being the most important factors in allowing time for Nature to increase the means of protecting healthy structures from infection. If there were the rapid formation and burrowing in the tuberculous abscess that are seen in the acute pyogenic abscess, Nature's efforts to protect healthy structures from infection would be helpless. It therefore appears justifiable to reason that, when a sufficient means of protection exists, any procedure which disturbs it, such as incisions, scraping of the sac, or more extensive operations, as advised by many, will, in proportion to the amount of healthy structures exposed and the amount of diseased tissue left at its original site, render Nature equally helpless to protect the healthy structures from infection and to prevent the spread of the disease.

Allow such an abscess to pursue its own course undisturbed by any operative procedure, and as it increases the protecting wall surrounding its contents increases with sufficient rapidity to meet the increasing demands for protection, the contents coming gradually nearer the surface, and if spontaneous absorption does not take place a spontaneous opening occurs. The conditions here are very slightly changed. The abscess wall is left undisturbed, with simply a small opening out of which the contents of the abscess are slowly discharged. There is the exposure of no freshened surface to infection, either with the tubercle bacillus or with pyogenic bacteria. When there is pyogenic infection it is in most instances so slight that it is readily overcome by Nature unaided. The difference in the picture presented by an abscess pursuing such a course and that of one which has been opened and curetted thoroughly, having left as its walls healthy bleeding tissues as a ready field for infection with the tubercle bacillus and pyogenic bacteria, will be readily appreciated, and the fact realized that absolutely nothing has been gained by such treatment. The slow and gradual emptying of the abscess through the small opening (which has occurred spontaneously) is an advantage, as it lessens the risk of septic infection.

When the temperature goes up after spontaneous opening, and to a degree indicative of a considerable amount of infection, it has been noticed that this usually occurs when the abscess cavity is emptied rapidly and completely, thus exposing the whole abscess cavity suddenly, and that the opening is situated so that the free discharge of the re-accumulated material which is infected from without is interrupted. For this a counter opening may be indicated. A few irrigations in such cases help Nature to get control of the situation, and the temperature returns and remains at from 99° to 100° F., nothing else being indicated but simple external dressing. In the great majority of cases irrigation is not needed, as it will be found that the constant irritation and freshening of surface in the abscess cavity, which is exposed to infection, caused by such treatment continued for any considerable length of time is sufficient to cause the temperature to remain higher and the discharge to decrease less rapidly than when the abscess is left absolutely alone.

The discouraging feature of cases sometimes seen of sinuses discharging for years, which have been left absolutely alone, is not so much the discharging sinuses as the actively progressive tuberculous bone disease underlying them, and the failure of the abscess to heal in such cases is due to the active and unrelieved tuberculous disease, and in no way due to the fact that the sinuses were not operated upon, as when such treatment is pursued the spread of the disease is encouraged and the risk from sepsis increased.

In suggesting a plan of treatment other than operative for abscess in connection with tuberculous joint disease, it may be well to present some statistics of results obtained by both methods of treatment. I have been able to obtain the report of but one group of cases showing the results of the non-interference plan; and in the statistics showing the results obtained by operation it has been thought fair to make use only of those cases treated under the most modern and improved technics, and as far as possible with the distinct object in view of testing this method.

Watson Cheyne (*Tuberculosis of Bones and Joints*) reports twenty-five cases of abscess in connection with hip-joint disease, treated by himself and Lord Lister, by aseptic incision and drainage, in which seventy-two per cent. of the patients were cured, twenty-four per cent. were improved, and four per cent. died. In a second group of fifty-eight cases of abscess in connection with spinal disease, forty-nine remained aseptic from first to last; only these are used, of which thirty-eight, or 77.5 per cent., had healed, while eight had not healed, and in five, or 13.1 per cent., the patients had died. In a third group of sixty-eight cases of abscess connected with disease of the six larger joints, drainage alone was employed in forty-two, in eighteen partial arthrectomy was performed, and in eight simple arthrotomy. Of these sixty-eight cases fifty, or 73.5 per cent., had healed when the statistics were compiled, and three patients, or 4.4 per cent., had died, leaving twenty-two per cent. not healed. The length of time required for healing when aseptic drainage was employed was from eight to twelve months. Lovett and Goldthwaite (*Transactions of the American Orthopœdic Association*, vol. ii) say that "the operative treatment of abscess was used to the exclusion of every other method in the Children's Hospital, Boston, from 1884 to 1888, the object being to test the value of such treatment, and during this time sixty-three cases were treated." In twenty of these cases the abscess closed, in twenty-three it remained open, with one or more sinuses, and twenty patients died. The length of time required for closure of the abscess was from six months to four years, although in most instances it occurred within a year or eighteen months.

Martin has reported (*Omaha Clinic*, December, 1894) 208 cases of hip-joint disease treated at the Hospital for the Ruptured and Crippled, New York, and of 121 of the abscesses treated by aspiration, incisions, etc., 62 patients were cured, 42 were not cured, and 16 died. Of the 42 not cured, the prognosis was absolutely unfavorable in 20, and the termination of the 23 remaining cases was not known. A summary of the entire number of cases here quoted shows a total of 326, 188, or 57.65 per cent., of which were cured, 93, or 28.83 per cent., were not cured, and 45, or 13.8 per cent., of the patients died.

Shaffer, in the *New York Medical Journal* of February 29, 1896, states that no tuberculous abscesses have been operated upon in the Orthopædic Hospital during the past four years, the object being to test the value of absolute non-interference. The abscesses were allowed to open spontaneously, if they opened at all, and only the simplest dressings were used during their entire course, but every attention was given to the detail of applying efficient mechanical protection to the diseased joint.

Of twenty-nine abscesses so treated, eight, or 27.58 per cent., underwent complete absorption; nineteen, or 65.51 per cent., after spontaneous opening, closed after a period ranging from two to twenty-one months, and in two, or 6.98 per cent., there were still small sinuses discharging a few drops daily.

It will be noticed that 27.58 per cent. of the abscesses in Shaffer's cases were completely absorbed, in all 93.09 per cent. cured, and that there was no death.

In Cheyne's group of twenty-five cases which show the best results, only seventy-two per cent. were cured, twenty-four per cent. improved, and four per cent. died.

In Lovett and Goldthwaite's sixty-three cases it is stated that "there was no case of anything approaching septicæmia, so sepsis can not explain the high mortality. Four patients died of tuberculous meningitis, two of phthisis, and six of amyloid degeneration of the viscera.

With the accumulated evidence that the operative treatment of these abscesses is not satisfactory, as shown by the three hundred and twenty-six cases here referred to, of which only 57.65 per cent. were cured, and with the fact demonstrated by pathological investigation and clinical observation that such an abscess is not due to the same cause as that of a pyogenic abscess and does not produce the same symptoms, it does seem that the most rational treatment is that which is devoted to the relief of the diseased joint, the underlying and only cause of the abscess; and when this is accomplished by the constant application of efficient mechanical protection to the diseased joint, and at the same time good hygienic conditions are brought to bear upon the treatment of the case, it will be found that the abscesses in connection with such disease in most instances need no operation, being of secondary importance as regards the patient's immediate comfort or ultimate recovery and terminating most favorably when left absolutely alone.

126 East Fifty-ninth Street.

Therapeutical Notes.

The Horse-chestnut as a Remedy for Hæmorrhoids.—The *Therapeutische Wochenschrift* for April 18th attributes to Artault the discovery that the horse-chestnut, the seed of *Æsculus Hippocastanum*, in the form of a fluid extract, exerts a prompt remedial action in painful and hæmorrhagic attacks of hæmorrhoids. He has used it without a failure in twenty one cases, and in only two was any unpleasant effect observed. In those two, a recurrence of the menstrual flow took place in about ten days after its cessation. The following formula is given:

℞ Fluid extract of horse-chestnut...... 1 oz.;
Chloroform........................ 5 drops.

M. S.: Ten or fifteen drops to be taken, in a glass of wine or *eau sucrée*, twice a day, before eating.

If there is much hæmorrhage, the following may be substituted:

℞ Fluid extract of horse-chestnut.. 5 drachms;
Fluid extract of hamamelis...... 2½ "
Oil of peppermint............. 2 drops.

M. Dose, fifteen drops, twice a day.

An Intranasal Application for Epistaxis.—Rougier (cited in the *Journal des praticiens* for April 24th) recommends the following:

℞ Benzoic acid,
Tannic acid,
Carbolic acid, } each.............. 1 part;
Collodion......................... 20 parts.

M.

For the Itching of Urticaria.—The *Correspondant médical* (*Province médicale*, April 24, 1897) recommends spraying with the following solution:

℞ Menthol.......................... 1 part;
Chloroform,
Ether,
Spirit of camphor, } each........... 3 parts.

M. After spraying the affected parts, dust them with zinc oxide.

The New York Celtic Medical Society.—At the next regular meeting, on Thursday evening, the 27th inst., the following papers will be read: Neurasthenia and its Management, by Dr. Murray; and Preventive Medicine, by Dr. McGillicuddy. Scientific communications and cases will be presented, and specimens and new instruments exhibited.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, MAY 15, 1897.

A SUPERNUMERARY THYREOID GLAND ON THE TONGUE.

Dr. J. Seldowitsch, of St. Petersburg (*Centralblatt für Chirurgie*, May 1, 1897), mentions the great rarity of an accessory thyreoid gland situated at the base of the tongue, although they are not uncommon in the neck, and states that he has been able to find in literature accounts of only four cases. He then relates an example observed by himself. The subject was a girl, fourteen years old, who presented herself with a roundish, smooth, and rather firm mass of the size of a cherry, situated on the root of the tongue, at the foramen cæcum. It was sessile and obstructed the fauces so as to cause difficulty in swallowing. She could not give a satisfactory account of its origin, but said that it had given her trouble for a number of months. She was entirely healthy in every other respect.

Under cocaine anæsthesia, Dr. H. Zeidler removed the growth with the galvano-caustic snare. The patient did well after the operation and left the hospital wholly restored. The mass was found to consist of thyreoid-gland tissue—regular follicles filled with colloid masses. In seven months after the operation the girl returned with well-marked myxœdema. The face and the mucous membrane of the mouth were swollen, the tongue was enlarged, there was swelling over the clavicles, there was great augmentation of the circumference of the neck and somewhat less of those of the hands and the abdomen, she felt cold, there was absence of perspiration with dryness of the skin, and there was diminution of hæmoglobin and red corpuscles in the blood. The intellectual phenomena were particularly pronounced; she was sluggish, apathetic, slow of step, forgetful, and so easily fatigued as to be unfit for work.

This, then, was a case of myxœdema due to the removal of an accessory thyreoid gland, an occurrence which the author has not yet found recorded, in spite of the frequent occurrence and removal of cervical supernumerary thyreoids. He presumes that in this instance the normal thyreoid was not developed, as it could not be detected by palpation, and that the supernumerary organ was alone capable of performing its function. The girl was treated successfully by means of thyreoid medication. The practical deduction drawn by the author is that we should not remove the whole of an accessory thyreoid gland, without subsequently employing thyreoid treatment, unless it is quite certain that a normal gland also is present.

HYDRASTIS CANADENSIS IN THE TREATMENT OF BRONCHIAL CATARRH.

In the *Centralblatt für innere Medicin* for May 1st, Dr. M. Saenger, of Magdeburg, gives his impressions of hydrastis as a remedy for bronchial catarrh. It seems that some six years ago he prescribed it for a patient whom he was treating for a tuberculous affection of the larynx and apex catarrh, the immediate occasion of its employment being a trifling hæmoptysis caused by the patient's lifting a heavy weight. Four days later Dr. Saenger saw the patient again, and learned from him that for three days there had been no blood in the expectoration, and, furthermore, that a tormenting cough with which he had suffered had completely disappeared, the expectoration had become decidedly less, and the character of the sputa had changed in that they were far less frequently greenish and tenacious than before. The patient, a man of intelligence, imputed all his improvement to the use of the medicine that had been ordered for him.

Although Dr. Saenger himself was properly skeptical as to this point, he tried hydrastis on another phthisical patient, not for the purpose of checking hæmoptysis, but to mitigate a troublesome cough with great difficulty of expectoration. In this case, too, there was great improvement. For the most part, the sputa lost their purulent admixture and became thinner. The patient declared that the medicine had given him more relief than he had obtained from the morphine, codeine, Dover's powder, apomorphine, and other like drugs that had previously been ordered for his cough. His night's rest was no longer disturbed by coughing, he could breathe easier and deeper, he felt stronger, and he was better able to attend to his business. As in the first case mentioned, physical examination of the thorax showed a notable diminution of the bronchial catarrh.

Subsequently Dr. Saenger used hydrastis in a great number of cases of bronchitis, including those not dependent on tuberculous trouble. He found that in the initial stage of acute bronchial catarrh it was quite ineffectual, but that in the subsequent course of the disease it was beneficial, especially if the course was protracted and the sputa had lost their purely mucous character and assumed a muco-purulent aspect. He found the remedy particularly efficacious in chronic bronchitis, for it mitigated the cough strikingly, facilitated expectoration, changed the muco-purulent character of the sputa to a more mucous one, and decidedly diminished the physical signs.

As compared with opium and its derivatives, says Dr. Saenger, if hydrastis is not quite so prompt in its action in checking the cough, it is more enduring and its final effect is greater, for it acts upon the cause of the cough, producing a more or less complete disappearance of the catarrh. As an expectorant, it is at least equal to the other expectorants and solvents that are in use. So far as can be judged from physical exploration of the chest and from examination of the sputa, it far excels the other anticatarrhal drugs in use. He states that he could not do without hydrastis now in the treatment of bronchial catarrh, acute as well as chronic, for it enables him to dispense with the use of opium and its derivatives almost entirely in the treatment of tuberculous subjects.

He has employed it in the form of the fluid extract almost exclusively. To adults he gives twenty, twenty-five, or thirty drops four times a day, in a little sweetened water. In case it does not produce the expected effects, larger doses may be used. He has not found hydrastinine so trustworthy as the fluid extract. He has never observed dangerous or unpleasant effects from the doses of the fluid extract mentioned, but he remarks that very large doses may give rise to angina pectoris in the subjects of heart disease and in very debilitated persons.

MINOR PARAGRAPHS.

THE PHYSICIANS' MUTUAL AID ASSOCIATION.

THE twenty-eighth annual report of the New York Physicians' Mutual Aid Association, dated January 28, 1897, but with the list of members brought up to February 27th, shows that the organization now has members in the counties of Albany, Broome, Cayuga, Chemung, Chenango, Dutchess, Erie, Essex, Fulton, Greene, Herkimer, Kings, Livingston, Madison, Monroe, Montgomery, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Oswego, Putnam, Queens, Rensselaer, Richmond, St. Lawrence, Saratoga, Schenectady, Steuben, Suffolk, Sullivan, Tioga, Ulster, and Westchester, also a considerable number of non-resident members (members who formerly lived in New York) in various States and in foreign countries. We are glad to note these indications of the association's continued prosperity.

ITEMS.

The New York Quarantine Service.—On Tuesday, May 18th, the disinfecting steamboat James W. Wadsworth will be ready for inspection by physicians from 2.30 to 6 o'clock P. M. at the foot of West Forty-fourth Street. In addition to the steam outfit, the boat has recently been supplied with an apparatus for disinfection by formaldehyde gas. Medical men are invited to visit and inspect the steamer.

The New York Academy of Medicine.—At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 17th inst., the following papers will be read: A Probable Case of Thrombosis of the Lower Central Retinal Vein, and a Review of the Literature on the Subject, by Dr. J. H. Claiborne; and Insufficiency of the Ocular Muscles, by Dr. S. M. Payne. Patients and specimens will be presented by Dr. R. G. Reese, Dr. H. H. Seabrook, Dr. W. B. Marple, Dr. Frank H. Lewis, and Dr. J. E. Weeks.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 11, 1897:

DISEASES.	Week ending May 4.		Week ending May 11.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	4	2	7	1
Scarlet fever	237	6	213	9
Cerebro-spinal meningitis	6	4	3	0
Measles	266	7	360	7
Diphtheria	273	34	293	56
Croup	10	4	12	2
Tuberculosis	170	120	224	102

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, cholera, yellow fever, and plague have been received in the office of the supervising surgeon-general:

Small-pox—United States.

Boston, Mass.	May 1–8	4 cases.	
Brooklyn, N. Y	May 1–8	1 case.	
New York, N. Y	May 1–8		2 deaths.
Memphis, Tenn	April 1–30	5 cases.	

Small-pox—Foreign.

Bergen, Holland	April 7–14	1 case.	
Bombay, India	March 30–April 6		1 death.
Bordeaux, France	March 20–27		1 “
Calcutta, India	March 20–27		3 deaths.
Cienfuegos, Cuba	April 18–25		1 death.
Gibraltar	April 11–18	3 cases.	
Hong Kong, China	March 20–27		7 deaths.
Madras, India	March 27–April 2		3 “
Madrid, Spain	April 14–21		2 “
Matanzas, Cuba	April 21–28		5 “
Montevideo	March 5–12	2 “	
Nagasaki, Japan	March 30–April 6	15 “	4 “
Odessa, Russia	April 10–17	19 cases,	6 “
Rotterdam, Holland	April 17–24	1 case.	
St. Petersburg, Russia	April 10–17	9 cases,	3 “
Trieste, Austria	April 10–17	5 “	
Vera Cruz, Mexico	April 22–29		1 death.
Zurich, Switzerland	April 10–17	3 “	
Osaka and Hiogo, Japan	March 27–April 3	2 “	

Cholera—Foreign.

Bombay, India	March 30–April 6		1 death.
Calcutta, India	March 20–27		153 deaths.

Yellow Fever—Foreign.

Matanzas, Cuba	April 21–28		1 death.
Sagua la Grande, Cuba	April 10–24	39 cases,	9 deaths.

Plague—Foreign.

Bombay, India	March 30–April 6		399 deaths.

The Richmond Academy of Medicine and Surgery.—At the last regular meeting, on Tuesday evening, the 11th inst., a discussion on Some of the Evils that threaten the Medical Profession was to be opened by Dr. W. S. Beazley.

The Hospital Graduates' Club will hold its annual dinner on Thursday evening, May 20th, at the Union Square Hotel.

Changes of Address.—Dr. H. A. Bernstein, to No. 1673 Madison Avenue, New York; Dr. J. W. Lea, from Lecompte, Louisiana, to Jackson (Insane Asylum), Louisiana; Dr. Maurice J. Lewi, to the Bowling Green Building, Nos.

5 to 11 Broadway, New York (summer residence, No. 1 Overlook Terrace, Yonkers); Dr. Herbert F. Williams, to No. 197 Gates Avenue, Brooklyn.

Society Meetings for the Coming Week:

MONDAY, *May 17th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Boston Society for Medical Improvement; Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *May 18th:* Illinois State Medical Society (first day—East St. Louis); Medical Association of Missouri (first day—St. Louis); Nebraska State Medical Society (first day—Lincoln); Medical Society of the State of Pennsylvania (first day—Pittsburgh); New York Academy of Medicine (Section in General Medicine); New York Odontological Society; Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Chemung (annual) and Kings, N. Y.; Hampden, Massachusetts, District Medical Society (annual—Springfield); College of Physicians of Philadelphia (Section in Ophthalmology); Baltimore Academy of Medicine.

WEDNESDAY, *May 19th:* Iowa State Medical Society (first day—Marshalltown); Ohio State Medical Society (first day—Cleveland); Illinois State Medical Society (second day); Medical Association of Missouri (second day); Nebraska State Medical Society (second day); Medical Society of the State of Pennsylvania (second day); Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

THURSDAY, *May 20th:* Indiana State Medical Society (first day—Terre Haute); Iowa State Medical Society (second day); Ohio State Medical Society (second day); Illinois State Medical Society (third day); Medical Association of Missouri (third day); Nebraska State Medical Society (third day); Medical Society of the State of Pennsylvania (third day); New York Academy of Medicine; Brooklyn Surgical Society; College of Physicians of Philadelphia (Section in Gynæcology); New Bedford, Massachusetts, Society for Medical Improvement (private).

FRIDAY, *May 21st:* Indiana State Medical Society (second day); Iowa State Medical Society (third day); Ohio State Medical Society (third day); New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Births, Marriages, and Deaths.

Married.

DOUGHERTY—SWEENEY.—In Philadelphia, on Wednesday, May 5th, Dr. A. F. Dougherty, of Ashley, Pennsylvania, to Miss Katherine Sweeney, of Philadelphia.

HANNAH—SESSIONS.—In Union Springs, Alabama, on Wednesday, April 28th, Dr. William J. Hannah, of Pensacola, Florida, and Miss Sessions.

Died.

CANFIELD.—In Ingersoll, Ontario, Canada, on Wednesday, March 17th, Catherine Grannis, infant daughter of Dr. F. D. Canfield.

CUSHING.—In Brookline, Massachusetts, on Sunday, May 9th, Dr. Joseph Cushing, in the sixty-first year of his age.

FOSTER.—In Pittsfield, Massachusetts, on Wednesday, May 5th, Anna E., widow of the late Dr. George Tiffany Foster and mother of Dr. Matthias Lanckton Foster, of New York, in the eighty-first year of her age.

MCNAIRY.—In Lakeland, Kentucky, on Wednesday, May 12th, Dr. Hugh F. McNairy, aged fifty-four years.

LOTT.—In Brooklyn, on Monday, May 10th, Dr. Christopher Lott.

Letters to the Editor.

SPECIALISTS AND THEIR FEES.

NEW YORK, *May 10, 1897.*

To the Editor of the New York Medical Journal:

SIR: I wish to take issue with you in regard to the statement in an editorial of the *Journal* for May 8th in regard to the responsibility for the abuse of medical charity, that "there are still many men of eminence in the profession who seem to think it beneath them to accept small fees from the poor; they prefer to treat them gratuitously in charitable institutions."

First, I wish to state that I am a specialist in diseases of the eye and ear and am not the youngest or the oldest in the city, but have been in practice a sufficient number of years to become fairly well acquainted with many habits of my *confrères*. I believe that I can assert without danger of contradiction on the part of any one conversant with the facts that the above-quoted statement is at best true of not more than half a dozen out of the very large number of gentlemen in this city who devote their entire time to this specialty. It is the custom of a very great majority to reduce the fee to a patient who brings satisfactory evidence from the family physician that the payment of the usual fee would entail hardship. The very few exceptions to this rule may include two or three whose offices are so crowded that the maintenance of a high fee is necessary in order to keep the amount of work they are called upon to do within the limits of physical endurance, and perhaps a few young men who hope by the maintenance of a high fee to build up a select practice. Such a method of keeping a practice within bounds has been employed in this city by the unusually successful, not only among specialists, but also among general practitioners, and is beyond question a proper method to employ, while the efforts of a young man to circumscribe his practice within a certain class may be viewed with equanimity.

As an evidence that my statement that skillful specialists in diseases of the eye and ear will furnish their services for reduced fees in the manner I have stated is founded on fact, I will adduce the rules in regard to the admission of patients to the daily clinic at the Manhattan Eye and Ear Hospital. The superintendent of that institution is instructed to refuse admission to any and all persons who can, in his belief, pay any fee, however small, and to furnish such persons a printed list of the members of the attending staff from which to select at their own volition a specialist whom they may consult. The list of specialists thus furnished contains the names of not only young men, but also those of riper years, mostly between the ages of thirty-five and sixty, and includes some of the most distinguished representatives of the profession, who have expressed their willingness to treat patients thus refused admission for fees commensurate with their ability to pay.

Although I am not so conversant with the custom of members of other specialties as with those of my own, the courtesies which have been accorded poor patients whom I have from time to time sent to various gentlemen engaged in special lines of practice incline me to the belief that what I have said of ophthalmologists is true of all, and that such a charge as the above-quoted statement from your editorial should not be made against specialists in general.

SPECIALIST.

Proceedings of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Fourth Triennial Meeting, held in Washington on Tuesday, Wednesday, and Thursday, May 4, 5, and 6, 1897.

The President, Dr. WILLIAM H. WELCH, of Baltimore, in the Chair.

THE first day's session was in charge of the American Ophthalmological Society and the American Otological Society.

The Gouty and Rheumatic Diatheses of the Eye.—The first paper in the discussion of this subject, by Dr. CHARLES STEDMAN BULL, of New York, was entitled Lesions in the Retinal Vessels, Retina, and Optic Nerve. Dr. Bull said that it was well known that gouty persons were prone to hæmorrhages as a result of increased arterial tension and changes in the arteries. It was worthy of note that endarteritis and endophlebitis were found oftener in the retinæ of persons afflicted with atypical forms of gout than in the retinæ of those presenting the classical symptoms of acute gout. Some authorities looked upon these vitreous hæmorrhages as pathognomonic of gout. The subjective symptoms were deterioration in the vision and photophobia, most marked with artificial light. The ophthalmoscope showed a blurring of the outlines of the disk, diminution in the calibre of the retinal arteries, broad white lines along both the arteries and veins, and occasional dilatations of the veins resembling fusiform aneurysms. The changes in the fundus were always bilateral, though rarely symmetrical; the degenerative changes in the vessels were at first very minute; the general angeiosclerosis and patches in the retina caused marked impairment of vision, chiefly central; hæmorrhages into the retina were observed almost exclusively in the early stages of the disease; an important feature was the peculiar yellowish granular exudation in the retina, generally leaving the macula intact until late in the disease; the changes in the optic nerve were generally intraocular.

Dr. S. OLIVER RICHEY, of Washington, spoke chiefly of glaucoma. The increased intra-ocular tension in glaucoma, he said, was due to the distention of the blood-vessels, and associated with this increased tension were arteriosclerosis and functional disturbance of the heart. Every form of glaucoma might be considered as due primarily to gout or to acquired syphilis in the tertiary stage. One anatomical point upon which the speaker laid special stress was regarding the length and course of the venæ vorticosæ. These passed in the meshes of the sclerotic, downward and backward. The shortest of them measured 1.5 millimetres in length, or only half as long as the sclerotic was thick at its thickest part. With the high arterial tension found in gout, the arteries became engorged, and, as a result, the arteria centralis pressed upon the vein and caused distention. The moment there was any increase in the intra-ocular pressure, pressure was made on the venæ vorticosæ. This caused venous stasis, which, in turn, increased the intra-ocular pressure. In this way a vicious circle was established.

Dr. S. D. RISLEY, of Philadelphia, read a paper entitled Cataract and its Association with the Gouty and Rheumatic Diatheses. He said that when the physiological hardening of the lens was associated with loss of transparency, there were good grounds for believing that there was an underlying pathological process. In his opinion, gouty and rheumatic diatheses were the commonest causes of chronic and subacute inflammations of the uveal tract. The entire chorioidal tract would be found more or less involved in every instance. He had noted in some diabetics certain remarkable changes in refraction, apparently due to changes in the density of the fluids brought about by alterations in the composition of the blood. If this was true of diabetics, it was not improbable that similar changes in the nutrition of the lens might result from alterations occurring in the blood in connection with the gouty or rheumatic diathesis.

Dr. ROBERT SATTLER, of Cincinnati, spoke of Gouty and Rheumatic Affections of the Uveal Tract. He said that Jonathan Hutchinson ascribed the greater number of such disorders to gout, but the speaker thought iritis and other chorioidal complications occurred, in this country at least, more frequently in connection with rheumatism. Experience showed that the degenerative processes of gout made operative interference dangerous as regarded restoration of sight.

Dr. R. A. REEVES, of Toronto, spoke of Rheumatic and Gouty Affections involving the Cornea, Conjunctiva, and Sclera. He said that in gouty persons over forty years of age a form of keratitis was sometimes observed which was characterized by a porcelainlike opacity of the cornea, giving the impression that the sclera had encroached upon the cornea. A bandlike opacity of the cornea was always suspicious of gout. In gouty episcleritis there were apt to be inflammatory œdema, severe lacrymation, and pain. In scleritis proper a dusky zone usually marked the diseased area. The process was apt to be diffuse and attended with severe pain.

Dr. J. M. DA COSTA, of Philadelphia, opened the general discussion. He said that there was always room for doubt regarding phenomena supposed to be indicative of chronic rheumatism. He believed that four fifths of all the cases called chronic rheumatism were not rheumatism at all, and as for rheumatic gout, there was no such disease. It was proper, therefore, to be cautious about admitting the association of chronic rheumatism with eye affections. As a general practitioner, he had oftenest met with conjunctivitis and iritis in connection with acute rheumatism. These eye complications in cases of rheumatism were most apt to occur at the height of the rheumatic attacks, whereas gouty inflammation occurred both in connection with the acute attacks and in the intervals. In lithæmic subjects the eye affection was apt to attack the eyes successively, and was often associated with a good deal of headache.

Otology in its Relations to General Medicine.—Dr. CLARENCE J. BLAKE, of Boston, on behalf of the American Otological Society, delivered an address on this topic. He said that in children the most frequent diseases of the ear arose chiefly by extension through the Eustachian tube, and involved principally the middle ear. In the earache of childhood, attention should be given to the nose and pharynx, and it was the duty of the physician to make frequent objective examinations of the ear during the course of the acute exanthemata. It would be well, also, if more attention was given to the hearing capacity of school children. Twenty-seven per cent. of the cases of deafmutism were due to suppurative disease of the ear in early life. It should be the duty of the otological society to endeavor to secure examinations of the deafmutes in our institutions by competent aurists, in order to determine the individual hearing capacity, and thus furnish a valuable guide in educating these unfortunates. For example, some of them had a very fair tone-perception, although unable to hear ordinary conversation. As regarded the surgery of the ear, Dr. Blake said that, as it was easier for the aural surgeon to cope with the intracranial complications of ear affections than for the general surgeon, this field of surgery should be left to the aurist. An excellent example of what otology could do for general medicine was to be found in the light that had been thrown by aurists on the causation and nature of vertigo. In auditory, or labyrinthine, vertigo the cause was to be found in a hæmorrhage or other effusion into the labyrinth. Another form of vertigo resulted from the pressure of growths on the stapes. Many physicians failed to take cognizance of a common condition due to the increased effort demanded of deaf persons in order to keep in communication with the outer world. This had been appropriately described under the term "fatigue of deafness."

(To be continued.)

Miscellany.

The American Pædiatric Society's Second Report of its Collective Investigation of the Antitoxine Treatment of Laryngeal Diphtheria in Private Practice, for 1896 to 1897, is substantially as follows:

In this second and supplementary investigation, the aim has been to ascertain: 1. What percentage of cases of laryngeal diphtheria end in recovery without operation under antitoxine treatment; 2. What percentage of patients operated on recover. The report now submitted may properly be limited to answering these two inquiries.

Since the beginning of the general use of intubation, no disease has been more thoroughly observed and more fully reported than laryngeal diphtheria. Operative cases, especially, whether ending fatally or favorably, have been fully and promptly put on record. The result has been a collection and tabulation of cases available for control such as few diseases offer. There are thousands of intubation cases before the days of antitoxine, and thousands since, available for comparison. It is, then, to cases of laryngeal diphtheria, especially those requiring operative interference, that we may apply the crucial test of the value of the antitoxine treatment.

Sixty thousand circulars containing the following questions have been distributed:

Age of patient?
Diagnosis confirmed by:
  (1) Presence of other cases in the family?
  (2) Appearance of membrane elsewhere?
  (3) Bacteriological cultures?
How many days and parts of a day after the first appearance of the disease was antitoxine first administered?
How many doses of antitoxine were administered?
Dose of each injection in antitoxine units?
Whose antitoxine used?
Non-operative cases—evidence of disease:
  Hoarseness?
  Aphonia?
  Stenosis?
Operative cases:
  (1) Intubation? On what day?
  (2) Tracheotomy? On what day?
  How long, in days and fraction of a day, was the tube in the larynx or trachea?
Sequelæ (in recoveries):
  (1) Broncho-pneumonia?
  (2) Paralysis?
  (3) Nephritis?
  Death, cause of, and on what day?
  (1) Broncho-pneumonia?
  (2) Extension of membrane to the bronchi?
  (3) Sudden heart paralysis?
  (4) Nephritis?
  (5) Sepsis?
  (6) Accidents of operation?
  Recovery?
  Remarks, especially on fatal cases.

These circulars were distributed throughout the United States and Canada, the following means being employed: Contributors to first report, members of the society acting as agents for their respective localities, boards of health, local medical societies, and antitoxine manufacturers. At the outset, in this connection, it is a pleasure to acknowledge that the labors of the committee have been much lightened by the uniform good will of all addressed, more aid coming spontaneously than in the previous investigation. It is also a pleasure to especially acknowledge the society's indebtedness for efficient aid in distributing circulars and securing returns to the H. K. Mulford Company, Parke, Davis, & Co., Lehn & Fink (Gibier's), the health departments of Chicago, St. Louis, New Orleans, Denver, San Francisco, Boston, Washington, Buffalo, Providence, Ann Arbor, Newark, Montreal, Toronto, and other places.

To the New York health department are due the thanks of the society for every possible courtesy in distributing blanks and, through their inspectors, securing returns of operative cases.

In order to reduce sources of error it was desirable to bring together a large number of cases from widely distributed localities, from many different observers and operators, and for a period of time including all seasons of the year. All returns have been examined by the committee and only such cases accepted as bore satisfactory evidence that they were first of all diphtheria, and secondly that the lesion had invaded the larynx.

A total of 1,704 cases of laryngeal diphtheria are ours for present study. A few cases (228) had not satisfactory evidence that there was laryngeal involvement; indeed, some were reported through misunderstanding the fact that only laryngeal cases were wanted, and a few were reported in which there was no mention that antitoxine was used. These cases are, of course, not included in the number referred to above.

In a total of 1,704 antitoxine-treated cases of laryngeal diphtheria there was a mortality of 21.12 per cent. (360 deaths).

Cases in which there was no Operation.—The first inquiry of the circular was as to what percentage of cases of laryngeal diphtheria ended in recovery without operation under antitoxine treatment.

Of the whole 1,704 patients, 1,036 were not operated upon (60.79 per cent.). Of these, most did not require operative interference, a few were thought to require it, but an operation was declined. All cases are included, and, it will be noted, there are no eliminations.

Table of all Cases, showing Age and Result of Treatment.

	Fatal cases.	Recoveries.	Totals.	Mortality, per cent.
1 year and under	25	35	60	41·66
1 to 2 years	77	219	296	26·01
2 " 3 "	81	260	341	23·75
3 " 4 "	42	216	258	16·27
4 " 5 "	47	160	207	22·70
5 " 10 years	72	345	417	17·26
10 to 15 years	9	64	73	12·32
15 " 20 "	2	24	26	7·65
Over 20 "	5	17	22	22·72
Unknown	..	4	4	
	360	1,344	1,704	21·12

Among the 1,036 cases in which there was no operation, there was a mortality of 17.18 per cent. (178 deaths), or, to answer the inquiry of the circular exactly, 82.82 per cent. (or 858) recovered.

Good as this percentage of recovery is in so large a number of cases of diphtheria of the severest type, it is believed it is not so good as it ought to be. Cases of laryngeal diphtheria not requiring operation, according to the testimony of consulting intubationists, are seldom heard from a second time, and less often find their way into reports. It was formerly estimated that about ten per cent. of cases of laryngeal diphtheria ended in recovery without an operation. The present report shows that in 1,036 cases 82.82 per cent. recovered.

Operative Cases.—In analyzing this class of cases, it is believed a more exact conclusion as to the value of the antitoxine treatment can be arrived at than in the non-operative.

There will be entire harmony of opinion as to the severity of laryngeal diphtheria which requires operative interference. In the early days of intubation it was customary to speak of the percentage of recoveries, and twenty-five per cent. and twenty-seven per cent. were considered good results. In the last report the recoveries had crept up so high in the one hundred cases that it seemed more natural to speak of the percentage of mortality.

In this connection it is interesting to inquire what were the best reliable statistics of intubation, taking cases as they occurred, without selection, in pre-antitoxine days. In 5,546 intubation cases collected by McNaughton and Maddren in 1892, the mortality was 69.5 per cent., or, to bring the facts into line, 30.5 per cent. of the patients recovered.

O'Dwyer's personal experience, in private consultation, brings us more nearly face to face with the old-time experience with diphtheria. Note that the following 500 cases came under the observation and care of one practitioner, a skilled operator, extended over twelve years, and therefore included all types of the disease.

Exclusive of the first hundred cases of intubation, which he (O'Dwyer) regards as experimental, the results stand as follows: Second hundred intubations, recoveries, twenty-seven per cent.; third hundred intubations, recoveries, thirty per cent.; fourth hundred intubations, recoveries, twenty-six per cent.; fifth, seventy on the hundred intubations, recoveries, twenty-seven per cent.

Total percentage of *recovery*, 27.56 per cent. When he had reached seventy on the fifth hundred something occurred which made it appropriate to speak of percentage of *mortality*. At this point in history, antitoxine arrived and interrupted the old series forever. In O'Dwyer's next 59 cases the deaths were 14, or 23.7 per cent.

In a total of 1,704 laryngeal cases there were 668 patients operated upon. In the 668 there were 182 deaths, or a mortality of 27.24 per cent. In the former report, in 553 cases of intubation the mortality was 25.9 per cent. In approximate figures there is a difference between twenty-seven and a quarter per cent. and twenty-six per cent.

Summary.—Sixty thousand circulars were distributed throughout the United States and Canada.

Time allowance, the eleven months ending April 1, 1897.

Whole number of cases in this report, 1,704; mortality, 21.12 per cent. (360 deaths).

The cases occurred in the practice of 422 physicians in the United States and Canada.

Operations employed:

(*a*) Intubation in 637 cases; mortality, 26.05 per cent. (166 deaths).

(*b*) Tracheotomy in twenty cases; mortality, forty-five per cent. (nine deaths).

(*c*) Intubation and tracheotomy in eleven cases; mortality, 63.63 per cent. (seven deaths).

Number of States represented, twenty-two, also the District of Columbia and Canada.

Cases in which there was no operation, 1,036, 60.79 per cent. of all cases; mortality, 17.18 per cent. (178 deaths).

Cases of operation, 668, or 39.21 per cent. of all cases; mortality, 27.24 per cent. (182 deaths). Two facts may be recalled in connection with this paragraph. First, that before the use of antitoxine it was estimated that ninety per cent. of laryngeal diphtheria cases required an operation, whereas now, with the use of antitoxine, 39.21 per cent. require it. Second, that the percentage figures have been reversed, formerly twenty-seven per cent. approximately representing the recoveries, whereas now, under antitoxine treatment, twenty-seven represents the mortality. To put it in other words, before the use of antitoxine, twenty-seven per cent. recovered, now seventy-three per cent. recover, and this in the severest type of diphtheria.

The present report will strike many members of the society as revealing a mortality too large in each of the two classes. The mortality is large, larger than the personal experience of many in private practice would lead them to expect.

The reasons for this are (1) that antitoxine is still used too late, either from procrastination on the part of the physician or objection on the part of the friends, or (2) in a half-hearted way which shows itself in doses from one tenth to one fourth as large as they should be. In truth, both the physicians and the friends of the patient are timid. This report, it must be admitted, shows too large a mortality. In the opinion of the committee it is a larger mortality than will ever be shown again. Antitoxine is gradually being used earlier in the disease, and it will soon be used in sufficient doses.

To the society, the committee desire to say that they have sought to carry out their wishes in putting antitoxine on trial, to accept no testimony that did not bear the stamp of reliability, that they have employed the methods approved in the case of the first investigation and report, and that they have confined their work to definitely answering the main questions which the society and profession now have in mind. Points that were settled in the first report and have since been corroborated by general medical literature are not again taken up.

If the committee are asked to put forth the three most valuable points established in this eleven months' work, they are:

First. That the mortality of laryngeal diphtheria at present rests at 21.12 per cent.

Second. That sixty per cent. approximately have not required intubation.

Third. That the mortality of cases in which an operation is performed is at present 27.24 per cent.

[Signed.]
W. P. Northrup, M. D.,
Joseph O'Dwyer, M. D.,
L. Emmett Holt, M. D.,
Samuel S. Adams, M. D.,
} *Committee.*

The committee recommend that antitoxine should be given at the earliest possible moment in all cases of suspected diphtheria.

Of the products on the market, some have, by test, been found to contain from one half to one third of the antitoxine units stated on the label. Select the most concentrated strength of an absolutely reliable preparation.

All patients with laryngeal diphtheria, if two years of age or over, should receive as follows: *First dose*—2,000 units at the earliest possible moment. *Second dose*—2,000 units, twelve to eighteen hours after the first dose if there is no improvement in the symptoms. *Third dose*—2,000 units, twenty-four hours after the second dose, if there is still no improvement in the symptoms. Patients under two years of age should receive from 1,000 to 1,500 units, the doses to be repeated as above stated.

Nucleo-albumin.—This iron- and phosphorus-bearing compound, says Dr. William H. Porter (*Post-graduate,* May, 1897), has been found to exist in connection with the nuclei of the cells in both animal and vegetable life. It was so named because it was first discovered in connection with the nuclei of cells, and also because it was found to be composed largely of an albuminous material. Yet nucleo-albumin differs from the proteid bodies in general in that it contains iron and phosphorus.

Nucleo-albumin is far more abundant in vegetable than in animal cells, and it is especially abundant in the green vegetables and in the legumes.

The nucleo-albumin formed in the cells of the vegetable kingdom, according to Dr. Porter, is unquestionably the direct anabolic product of the synthetic processes that constitute chemical action as it is observed in plant life. It, like the proteid of the vegetable kingdom, is a highly complex polymeric compound; while the nucleo-albumin derived from the animal kingdom, like the proteid of animal origin, is always less complex or monomeric in its construction.

When this complex vegetable nucleo-albumin is taken into the stomach in the form of food, it, like the proteid of vegetable origin, is acted upon by the digestive ferments and rendered less complex, being by this process so transformed that it can be taken up from the alimentary canal by the epithelial cells that go to form the mucous lining. In its passage through these cells, or after it has entered into the system, it becomes, in part at least, isomerically transformed into animal nucleo-albumin, and finally appears as such in the milk, in the egg, and in various structures of the body. Other portions pass to the liver and are there oxidized in the hepatic cells. In this manner the nucleo-albumin is split up, forming simpler compounds, such as hæmoglobin, lecithin, water, carbon dioxide, etc. It is highly probable that in this oxidation process the polymeric molecule gives place to the less complex or monomeric form, thus explaining the formation of the simpler form of nucleo-albumin as it is found in the animal kingdom.

The hæmoglobin contains the iron that previously existed in the nucleo-albumin, and enters into the composition of the red blood-corpuscles, giving to them their continuous supply as rapidly as it is exhausted in its natural metabolic destruction. The lecithin contains the phosphorus, and it enters into the nerve tissue, either as one of the component parts of this structure, or as an oxidizable food product for the direct stimulation of the nerve cells.

When the total quantity of nucleo-albumin in any food-stuff is inadequate for the demands of the system, which is true of almost all substances in the animal class, an anæmic condition must sooner or later follow its too exclusive use. This fact is especially noticeable in the infant, of which the only diet is milk. And as the milk is defective in the proper quantity of nucleo-albumin, as the child advances from month to month it becomes anæmic; hence the necessity for the addition of the vegetable class of food-stuffs as soon as they can be tolerated and utilized by the digestive organs. This deficient quantity of nucleo-albumin in the animal class of food-stuffs is one of the conclusive proofs that the vegetable class must be added to the animal to secure the highest grade of nutrition. On the other hand, this line of argument does not prove that the vegetable class of food-stuffs is the most valuable. But, to the contrary, it demonstrates conclusively that the vegetable class is the most difficult to digest, and in consequence may not yield a sufficient amount of proteid material to satisfy the demands of the system. Therefore, to secure the highest grade of nutrition, the two classes must be perfectly adjusted as regards both quantity and quality.

If we consider that the total quantity of iron in the body is very small, ranging between 23.14 and 38.68 grains, or 0.0023 per cent. of the total weight; also that the total daily output of iron from the system in all the excreta, both liquid and solid, is on an average about two grains, it becomes evident that the maximum quantity of iron needed daily by the system is exceedingly small, and that the amount ordinarily introduced as contained in a well-regulated mixed diet is ample to furnish the full requirements of the physiological economy. This is assuming that the normal conditions exist for a perfect digestion, absorption, and assimilation of the compounds as they are contained in the food.

This small excretion of the iron is accomplished almost exclusively by the liver, the excretions of all the other glandular organs being practically devoid of iron. Much of the pigment matter eliminated from the body was at one time thought to contain iron. More careful investigation of the chemical nature of these pigment bodies, however, has demonstrated conclusively that they do not contain iron. It has further been proved that they are simply oxidation products, not necessarily of hæmoglobin, but of the pure proteids. Therefore, this small excretion of iron daily from the system, assuming that it all comes from the hæmoglobin, indicates that the hæmoglobin, as it exists in the red blood-corpuscles, is a very stable compound. It must be so, if it is capable of rapidly taking up and discharging oxygen; otherwise this rapid interchange of active oxygen would tend to produce a speedy reduction of the hæmoglobin. In opposition to this tendency to regard hæmoglobin as a stable compound, most writers on physiology state that it is a very unstable substance. This latter statement is based, however, upon the well-known fact that a simple watery solution of hæmoglobin will undergo decomposition in twenty-four hours. But this rapid dissolution in this abnormal menstruum must not be taken as proof positive that such is the case in the natural blood stream.

The intake and output of iron by the system are, comparatively speaking, very small; the iron in organic combination, commonly found in the food-stuffs as nucleo-albumin, is the only source of supply to the system for the formation of hæmoglobin; the amount of nucleo-albumin as ordinarily contained in a well-regulated mixed diet is far in excess of the requirements of the system daily.

If, for any reason, the nucleo-albumin is decomposed in its passage through the alimentary tract before it is absorbed, the system is deprived of the regular supply of this hæmoglobin-forming compound, and the condition known as anæmia will of necessity supervene.

When an inorganic preparation of iron is introduced into the circulation, it is eliminated from the system by the glandular organs, and the inorganic salts of iron are now found in the urine. In all these instances the iron acts like all other metallic poisons, and causes degeneration of the epithelial cells of the glandular organs. No amount of the iron salts given by the mouth will cause the iron in this inorganic form to appear in the urine, as has been found to occur after it has been hypodermically introduced into the circulation. This is pretty positive proof that the salts of iron are not absorbed, but pass through the alimentary tract as such, and there is no evidence to show that they are synthetically constructed into hæmoglobin.

These experiments with the iron compounds are supported by a similar series of observations in which manganese was the metal used instead of iron. Manganese is very closely related to iron, but is not found to be present normally in the human economy. Further than this, manganese is a metal that can be traced easily. When manganese salts have been injected into the circulation they have been found to appear quite rapidly in the renal, gastric, and intestinal secretions. On the other hand, when the manganese salts are introduced into the stomach for a long period, no manganese can be found in the mucous membrane of the intestine after washing, and none has passed into the urine. These observations on the salts of manganese harmonize exactly with those on the salts of iron, and, in a measure, confirm the view that the salts of iron are not absorbed and utilized by the system.

So far as the possibility of absorption is concerned, it makes no difference which one of the iron salts is introduced into the stomach. They are all converted into the chloride, if changed at all, in the gastric secretion.

One by one, all the vaunted preparations of iron fall into the same class, so far as their utilization by the physiological economy is concerned. The iron contained in them all follows the same course in its passage through the alimentary tract; the contained iron must be converted into a chloride. In the alimentary tract the chlorides, and possibly all soluble forms of iron, are quite readily attacked by the sulphur compounds, and appear in the fæces in the form of a black sulphide of iron. With all this, from the clinical and therapeutic standpoint, there is no drug in the whole materia medica the efficacy of which physicians in general feel so sure of as the iron salts in anæmia; but even here it must be admitted that they are often disappointing.

First, there is an anæmia produced by taking too little food or that which is deficient in the nucleo-albumin element. In either case there is an insufficient supply of material to the system out of which it can produce hæmoglobin.

Second, there is anæmia due to the introduction of sulphur compounds with the food, or to digestive disturbances in which the sulphur compounds are produced so abundantly in the intestinal canal that the natural supply of iron in the nucleo-albumin is completely exhausted in satisfying the sulphur compounds with iron. In either instance the natural supply of nucleo-albumin out of which the hæmoglobin can be formed is destroyed or prevented from gaining access to the circulation and hepatic cells. Hence, as in the first form of anæmia, there is a defective supply of the natural material entering the system out of which to form hæmoglobin.

A form of anæmia in which there is not necessarily any diminution in the food-stuffs as regards quantity or quality, or any excess of the sulphur compounds in the alimentary canal to destroy the nucleo-albumin contained in the food supplied, but where there is a disturbance in the chemico-physiological activity of the system, so that some of the contained elements of the food-stuffs, and particularly the nucleo-albumin, can be oxidized and utilized properly by the animal economy, is found in all the infectious diseases and when microbic and toxic agents are introduced into the system. It occurs in all the acute and chronic diseases of the circulatory and pulmonary system and in hepatic and renal affections. This condition is also encountered in the uric-acid and oxalic-acid conditions, in neurasthenia, rheumatism, diabetes, pernicious anæmia, etc.

In the class in which some positive toxic agents are introduced into the system, the poisonous compounds not only cause an arrest of the normal metabolism, but often produce a rapid disintegration of the hæmoglobin, so that the anæmia is due to both non-formation of hæmoglobin and an abnormally rapid destruction of that substance. The same prevention of formation and concomitant destruction of hæmoglobin are especially well marked in pernicious anæmia. This double action is much less marked in the more chronic forms of imperfect metabolism and states of suboxidation.

The treatment of the first form of anæmia—*i. e.*, that due to insufficient ingestion of the food-stuffs—is a perfect adjustment of the diet as regards quantity and quality. Special attention must also be given to the kind of food-stuff that can be digested and assimilated best in each special case. This is especially true of infants and small children. Remedies which will assist an enfeebled digestion, improve a weak circulation, and regulate an irregular and imperfectly acting nervous system must be administered when required. And special attention must be given to securing the proper amount of outdoor exercise.

To give the salts of iron in this class of cases—*i. e.*, assuming that there are no sulphur compounds in the alimentary canal to destroy the nucleo-albumin before it can reach the blood-stream—would, with our present knowledge of their action and the natural method of formation of hæmoglobin, be useless. They might be damaging to the system by disturbing the digestive function.

The second form of anæmia is best treated by the same careful attention to the diet, the digestion, the circulation, the nervous system, and outdoor exercise. It is at this point that we discover the true explanation of the action and utility of the iron salts. In fact, the explanation for all iron medication, whether with an inorganic or with some one of the many so-called organic preparations, is dependent upon this law of utilization of the nucleo-albumin and its abnormal destruction in the alimentary canal. It is here, however, that the regular administration of the chloride of iron is indicated. This preparation is particularly emphasized, because it most rapidly satisfies the sulphur compounds that are withdrawing the iron from the nucleo-albumin of the food before this iron-bearing compound can gain access to the blood stream, thereby cutting off the natural and only hæmoglobin-forming supply. It is further chosen by preference, because it does not tax the gastric secretion to convert it into a chloride in its passage through the stomach. If any other preparation of iron is used, it is highly probable that it must first be acted upon by the hydrochloric acid of the gastric juice and converted into a chloride; otherwise it is less likely to be acted upon by the sulphur compounds, and it will consequently be a useless drug. Some of the freely soluble preparations of iron may be exceptions to this general rule, and may satisfy the sulphur compounds directly without first being converted into a chloride. In a similar manner a concentrated solution of nucleo-albumin might directly satisfy the sulphur compounds; but even here, as with all the organic preparations, the probability is that they are, in part, first acted upon by the acid of the gastric secretion and converted into a chloride, which then satisfies the sulphur compounds. The uniformly well-pronounced results obtained from the chloride as compared with all the other preparations is almost conclusive proof that they must all be converted into a chloride to be thoroughly efficacious.

The only reason that can be urged logically as justifying the use of any iron preparation aside from the chloride is the fact that the latter may disturb the digestive functions. The question of palatability may also be urged as a determining factor in the selection of the preparation. When either one of these has to be considered, some one of the other preparations may suit the taste, and may be well borne by the stomach, and thus act more efficaciously.

The third class of anæmia requires the same attention to diet, digestion, etc., as the two preceding. Exercise, of course, can not be taken in all cases, but the best possible supply of pure air should be secured under all circumstances. The inorganic salts of iron, however, are of no avail unless there is an excess of the sulphur compounds in the alimentary canal.

We now see for the first time why the general opinion that the iron salts are contraindicated in the acute febrile conditions is a correct one. The anæmia of these diseases is not, as a rule, traceable to the action of the sulphur compounds in the alimentary canal, but it is due chiefly to the action of the toxines within the system, which both destroy and prevent the formation of the hæmoglobin within the animal economy. Hence, the inorganic salts of iron can only act as irritants to the already weakened digestive system. They are useless, and to administer them is a waste of material and money.

There are one or two exceptions to this general rule, as, for instance, in erysipelas and diphtheria. In these two diseases, and especially in the former, there is an overproduction of the sulphur compounds in the alimentary canal, which causes a very rapid withdrawal of the iron from the nucleo-albumin. This, added to the action of the toxines of the disease, causes a rapid loss of hæmoglobin and a progressive lowering in the oxygenating capacity of the system, so much so that the fibrin-forming function is largely destroyed, and Nature is deprived of one of the essential ingredients which is necessary to enable her to cope successfully with the existing pathological process. In this particular disease, the chloride of iron rapidly satisfies the sulphur compounds; the system is placed in a position in which it can take up and convert the nucleo-albumin into hæmoglobin. This accomplished, the oxygenating capacity of the economy is greatly increased, the fibrin-forming function is augmented, and a rapid reparative action is made possible. Thus an old and well-recognized clinical fact, the quick recovery from an attack of erysipelas under iron medication, is clearly elucidated.

In the chronic diseases, like diabetes, the renal affections, etc., both factors are at work in producing the anæmia; the sulphur compounds destroy the nucleo-albumin in the alimentary canal and within the system, and pathological processes are at work which tend to destroy the hæmoglobin more rapidly than it is replenished. In so far as the sulphur compounds are acting in the alimentary canal to produce the anæmia, this deleterious action is overcome by the inorganic iron salts, for they prevent the unduly rapid destruction of the nucleo-albumin. Thus, in a measure, these salts overcome the anæmia. As a large part of the anæmia is due, however, to causes acting within and not without the system, the iron salts do not produce the marvelous and rapid changes that follow their use in the second class of cases.

It is quite possible that in the acute febrile conditions, and in the chronic diseases, the administration of a concentrated solution of nucleo-albumin might enable us to relieve the anæmia in a larger number of patients. In the chronic diseases of this third class, the combined use of a concentrated solution of nucleo-albumin and the inorganic salts of iron would theoretically yield the best results.

With this interpretation of the physiological action of the animal economy and its chemical actions, and with the ætiology of anæmia clearly elucidated, the rationale of iron medication is established. Supported as it is by an abundance of clinical evidence, our iron therapeutics is changed from the empirical position that it has so long occupied to that of the truly scientific and rational. Since Dr. Porter's paper was read, he says, the Palisades Manufacturing Company have produced, in accord with the theory here advanced, a concentrated nucleo-albumin solution called hæmaboloids, and the results obtained have so far been quite satisfactory.

The Feeding of Typhoid-fever Patients.—In the *British Medical Journal* for May 1st, Dr. William Ewart inculcates a middle course in respect to the diet of patients with typhoid fever. The "general belief," he says, that for a typhoid-fever patient the best is a simple, and in particular a milk diet, and that the line of safety lies in a strict adherence to the approved routine, has probably saved many a life from the risks which often arise from too much zeal. Nevertheless, routine based upon a general belief which itself is derived from exclusively watching the operation of the routine is not a progressive method or a convincing argument. A definite assurance that relapses, while apt to occur with other diets, never did occur with a uniform and exclusive milk diet, would at once set at rest all controversy. In the absence of any assurance to that effect, it is well that the question of diet should be studied, and that we should bear in mind that clinical improvements, howsoever important, can not at their inception command the support of large statistics.

With Dr. Barrs's aims and arguments he largely agrees, and he admires Dr. West's practical caution; yet he differs from both in his practice, which might almost be described as a resultant of their diverging views. For a considerable time he has taught that, so long as we remained unable to deal with the bacillus, our primary indication was to keep up the vitality of the tissues by feeding the patient according to the very best method. How to do this effectually, with judgment and with safety, and with due regard to the indications in the individual cases, he says, is our daily problem.

Milk, the food of foods, and by far the most convenient of all for administration, can not be improved upon; but might it not be added to? Specially designed for the needs of the growing infant, it can hardly be regarded as also adjusted with perfect nicety either for the wear and tear of adult life or for the wasting effects of continued fevers. The excessive muscular wasting noticed in typhoid fever does not argue the necessity of a mainly nitrogenous diet; it rather points to deficiency in the daily allowance of fuel, a deficiency which must be made good from some source, even at the expense of so much muscle. In his opinion milk supplies much, but not all that is required; it should and can safely be supplemented with small and inoffensive adjuncts which day by day will make up the difference. A little more carbohydrate than milk contains and a little hydrocarbon thrown in may save a large and unnecessary waste of muscle. But we can do much more than merely economize weight, if at the same time we are careful not entirely to withhold the fresh vegetable principles which are universally held to be essential to the making of the best blood.

His endeavor has been to supply these additions early, and with that view to restore as soon as possible the digestive function of the upper alimentary tract. Putting aside the few exceptionally severe cases which no treatment and no dieting have hitherto saved, he says, this preliminary indication has been fully attained with the help of Mr. W. B. Wedgwood's valuable method of treatment by mercury and iron, which cleans the tongue, revives the energy, the appetite, and the complexion, and enables the whole pyrexial period after the first week to become a progressive return toward a normal alimentation.

For solid food in the ordinary sense he is no advocate, either during the fever or during the first week of apyrexia. But he does not find in his experience of the last few years any support for the view that supplementing the milk diet with soluble and easily-absorbed food-stuffs, which leave little or no fæcal residue, does anything but good, so long as the extras are carefully adjusted to the individual indications.

As soon as the "typhoid" condition has been overcome by medication—and this is most often the work of a very few days—maltine is well borne, so is yolk of egg, and a little later the white of egg also, or calf's foot or chicken jelly. Yet later blancmange, custard, honey, which is specially indicated in constipation, or even chocolate may be enjoyed; and, as digestion gains strength, the juice of oranges, the pulp of ripe grapes, and, as first suggested to him by Dr. J. W. Dickson, baked apples supply the grateful and healing fresh vegetable principles.

The patients' steady improvement and well-being generally speak for themselves. In a young woman admitted after ten days' exclusive but insufficient milk supply in a "typhoid" and somewhat wasted condition, he obtained on this plan a result which he had never noticed before during the continuance of the pyrexia, namely, an ample return of subcutaneous fat.

Dr. West, he says, wisely dwells upon the danger of relapse attaching to any abrupt change in a previously uniform and exclusive dietary: nothing is more likely than this result in a patient trained down in his digestive energy and in his stamina by an exclusive milk diet, which he regards as imperfectly adapted for the repair of a wasting fever and for the making of rich blood. This, he says, is precisely the risk which the early adoption of a varied and progressive diet seeks to obviate.

At the same time, he thinks, some share in the prevention of relapses has probably been due to the steady continuance of the mercury and iron treatment, not only throughout the attack, but for at least a week and a half after defervescence.

He maintains for this modified dietary that it is a distinct improvement on an exclusive milk diet in respect of the nutrition of the blood, of the heart, of the nervous system, and of the bowel; and that it has over the solid alimentation which Dr. Barrs advocates —and of which it supplies the essential constituents —an important advantage in the avoidance of any dangerous stress on the gastric and intestinal digestion, and of any accumulation within the bowel of insoluble and of putrescible residues. Its nutritive success is attested by the aspect and sustained strength of the patients, by their shortened convalescence and greater freedom from sequelæ, and by the absence of that craving which is not only a discomfort but a sign that they are relatively underfed.

The Profession in Fiction.—Large and unusual, says the *Lancet*, as are their opportunities of reading character and witnessing its response to the ordeal of circumstance, medical men have consistently shrunk from giving their experiences to the world. Their interest is primarily their patient's physical and mental well-being; the facts which come before them in diagnosis and treatment—often, indeed, intensely dramatic, always of value to the student of human nature—must remain undisclosed, as sacrosanct as the revelations of the confessional, in compliance with an obligation embodied for all time in the oath of Hippocrates. The literary layman, however, is not so bound; and in the world of fiction may reproduce professional facts and characteristics leading up to dramatic *dénoûment*, with a freedom only restricted by the laws of philanthropy and good taste. In these days, when the novel is largely usurping the place once monopolized by the pulpit, and all but abandoned (in spite of Addison's suggestion) by the stage, the field of medical experience is more and more cultivated by the writer of fiction, with a success, moreover, measured by the degree in which the individual has been at pains to master the human organization and to watch its behavior when face to face with the realities of disease and death. We could signalize more than one successful contribution to this form of fictitious art, but will confine ourselves to its most recent as well as (to our thinking) its most powerful example—*The Dowager's Determination*, by Mrs. Severne. The story turns on the decay, intellectual and moral, of a patrician house, the later heads of which have, by an ill-assorted intermarriage, tainted it with mental disease betrayed in the lives, generally short, of its successive heirs. The dowager, a powerfully-drawn character, sets herself to force back this degenerative current, and, with equal skill and cynicism, effects the marriage of her grandson, Lord Raymore, with a typically prepossessing English girl, Lilian Jardine, the local rector's niece, between whom and the young practitioner of the neighborhood, Stephen Brand, there had for some time been developing relations more than friendly. Lord Raymore has already shown signs of insanity—signs professionally known to Dr. Brand, but not known by the girl and all but ignored by her uncle, the social ambition of both being proof against any misgiving as to the sacrifice they are unwittingly courting by acquiescence in the dowager's "determination." The marriage takes place, and then begins a series of incidents, each more dramatic than the other, as husband and wife, like the hero of the *Iron Shroud*, find their doom narrowing daily in upon them with a "necessity" (ἀνάγκη) as inexorable as that of the Æschylean Trilogy. Mrs. Severne has read widely and deeply in the literature of mental disease, and for a lay writer steers commendably clear of the rocks on which so many literary voyagers in professional waters have already made shipwreck. Lord Raymore is the central figure, but the "hero" in every sense is the young medical man, whose conduct from first to last is that of a chivalrous gentleman as well as a master in the healing art. It would be ungracious to anticipate the reader's interest by forestalling the course and culmination of the incidents, but we may note in passing the felicity with which the local color of the scenes of suffering is given—"the ears strained to catch the closing of a distant door or the muffled sounds which, in some peculiar way, tell of sickness in a house." Over and above its success in portraying the profession in real life the novel has a special value in powerfully exposing the sin, the actual "crime," as John Stuart Mill called it, of promoting marriages regardless of all but social or financial considerations. Mrs. Severne drives her moral home with force and effect, and the tale that gives point to it might be varied almost indefinitely by reading for "madness" one or other of the scarcely less sombre maladies which convert marriage from a blessing into a curse.

The Premonitory Zoster of Tuberculosis.—It has been known for a long time, remarks a writer in the *Presse médicale* for April 24th, that herpes zoster is frequent in tuberculosis; that it has been observed in persons who have, without doubt, been tuberculous; and that it may be an indication of the disease.

In some cases the zona is premonitory, a veritable precursor of tuberculosis, and in these cases it may be considered as a precocious manifestation of a latent bacillary infection. This is an important point, for it enables the physician to combat the tuberculosis in the beginning when it is yet curable.

The eruption may occur on any part of the body, but it occurs oftenest on the chest. Sometimes a very close relation seems to exist between the seat of the eruption and that of the tuberculosis. For example, a child may die from tuberculous meningitis following ophthalmic herpes zoster, or a genital tuberculosis may appear a short time after recovery from a lumbar abdominal herpes zoster, or the intercostal herpes zoster may precede the evolution of pulmonary tuberculosis.

The practical conclusion to be drawn from these facts is that in a subject presenting this zona the skin manifestation should not be considered unimportant; the prognosis should always be reserved, the physician bearing in mind that tuberculosis may sometimes be present.

Remarks on Suits for Malpractice.—Dr. Mordecai Price, of Philadelphia (*Medical and Surgical Reporter*, May 1, 1897), relates the case of a woman whom he saw in consultation on October 1, 1894, with a view to an operation for the removal of a bleeding growth at the mouth of the urethra. It was as large as a hulled walnut, and gave her great pain and annoyance, with a constant discharge of blood and pus. This condition had been produced by the constant use of bandages and cloths applied to the parts to prevent the intestinal discharges from soiling her clothing while she was sitting or walking. Examination disclosed the fact that the perinæum had been torn through into the bowel for a distance of two inches. This had occurred some thirty years before, when she was delivered of her only child. The growth presented all the appearance of malignancy, and to remove it and leave the cause, says Dr. Price, would have been to insure its return. The woman was told that to prevent its recurrence there would have to be an effort made to close the rent in the bowel so as to protect the mouth of the bladder. Dr. Thomas S. K. Morton had previously closed a vesico-vaginal fistula.

Up to this time the patient had declined any other operative interference, and would not now have consented had it not been for the condition of the growth. She stated that if both operations could be done at the same time, she would consent, as she was unwilling to take the ether twice. Dr. Price agreed to take her into the hospital, and on December 10, 1894, she entered and was prepared for the operation, which was done two days later.

The patient was a large woman, and the parts were greatly swollen and irritated by the discharges from both the bowel and the malignant growth at the mouth of the bladder. The changes in the parts made the operation a difficult one. The tumor had to be removed first and then closure effected of the sæptum that separated the vagina from the bowel. This was done by cutting away all thickened mucous membrane over the parts that were united before the accident at childbirth, then closing from an inch above the top of the rent in the vagina and bowel, continuing the stitches down to the outlet of the bowel, and finally exposing the ends of the sphincter muscle and re-uniting them after thirty years' separation and non-use. The closure required the use of twenty-three stitches. From non-use and atrophy of the muscle the mucous membrane protruded over the sphincter for about an inch and a half. To insure union this prolapsed portion should have been removed, says Dr. Price, but to do so would have been to prolong the operation to a dangerous degree in a greatly debilitated patient and one already much shocked from the ether and amount of work done. The woman had been a confirmed invalid during the entire period from the birth of her child to the time of the operation. When Dr. Price first examined her, she told him that she could not go out without the liability of discharges from the bowel soiling her clothing before she got off her front steps.

The operation was a greater success than could reasonably have been expected in a patient in such poor condition for so many years, and with the added complication of prolapse of the bowel. At the time she left the hospital she had a small fistulous opening near the bowel, from the giving way of one of the stitches. Her nervous system was so broken down that it was with the greatest difficulty that Dr. Price could get her to let him remove the stitches, and then only one or two at a time. She would shake the bed from fear even before anything was done.

After the operation, when the patient was placed in bed, she was suffering greatly from shock. Warm blankets and hot bottles were applied, as in all other cases of danger from shock. From one of the bottles she received a blister on the right foot, under and a little to the front of the joint. This burn was so slight that had the patient been in good condition it would have healed in a very few days, but she had been suffering for years with varicose veins of both legs, with ulceration at times, that would not heal until the patient's condition was improved by treatment.

After the patient returned home Dr. Price examined her, at the request of Dr. Hinkle, as he thought the malignant growth threatened to return. He found the fistula almost closed and leaking but little, and the sore foot healing well. The latter was completely well on March 1, 1895, as the patient informed Dr. Hinkle at that time. The fistula closed before the burn healed.

The suit instituted in this case, says Dr. Price, was evidently not thought of until after a bill for professional services had been rendered and payment demanded. The patient, from the date of leaving the hospital, seemed perfectly satisfied with what had been done for her, at no time complaining with any special reference to the accident or to her general treatment, and Dr. Price suggests as the best possible safeguard against these suits that the surgeon receive his fee at the time of rendering his services. He has tried this rule and found it work admirably. Having paid for services, he says, seems to have a very soothing effect upon the patient, whose general rest seems thus to be improved and who carries around with her less temptation for the lawyers.

The trouble growing out of the burn in the case related resulted from several causes, presenting unique phases from a medico-legal standpoint, Dr. Price remarks. The woman had been in a helpless condition for twenty-eight years from loss of control of the bowel and broken-down health from confinement in the house owing to this cause. Her troubles were further aggravated by varicose ulceration and congestion of the limb, as she had had a number of open sores which it had been very difficult to heal. The operation was a long one, and the surgical work was tedious. There were really two procedures: one for the removal of an epithelioma at the mouth of the bladder, and the control of the ensuing hæmorrhage required considerable time. The closure of the tear in the sphincter required twenty-three stitches. The two procedures occupied more than an hour for their completion, so that the anæsthesia was a long one. The patient was suffering severely with shock when placed in bed. Her age, about sixty years, was also a factor to be considered. Hot applications protected by flannel at such a temperature as could be borne with comfort by the cheek of the nurse were made. Notwithstanding all precautions, the patient was blistered on the inner side of the foot, and the burn was some three months in healing. Some one, says Dr. Price, has recently written an article calling attention to the fact that a patient reacting from ether anæsthesia will suffer a burn or a blister from a much lower temperature than one who has not taken an anæsthetic. He is not able to confirm this statement from his own experience, but he is constrained to believe that it is correct.

Dr. Price speaks of another suit brought by a man who had been suffering from influenza and who was unquestionably insane. To care for him Dr. Price demanded that the family employ a competent nurse or have him placed in a hospital to prevent his doing harm to himself, his family, or his neighbors. They asked for a consultation, and Dr. X. Dercum saw the patient on the night of the same day that he had informed the family of his condition. Dr. Price was unable to meet Dr. Dercum, but heard from him immediately to the effect that if he did not have the patient removed at once he might kill somebody. Dr. Price had given him a prescription for seven grains and a half of chloral and an equal quantity of potassium bromide in a teaspoonful of syrup of red orange. In this suit for malpractice, the family fixed their claim for damages at five thousand dollars. The case remained on the docket for ten years. It could not be forced to trial, and was at last dismissed, the plaintiff paying all costs and Dr. Price's bill in full for personal services, with interest from the date of its rendering.

Dr. Price makes these cases the text for some general remarks on malpractice suits.

Reasoning from common-sense principles, that common sense upon which it is maintained all law is based, he says, as medical men we are only responsible for those accidents preventable by reasonable or ordinary skill, care, and diligence. We are certainly by no principle of common justice legally responsible, either criminally or civilly, for those accidents over which we have no control or those that are the sequence of troubles, constitutional it may be, independent of those we surgically or medically correct or attempt to correct. Every self-respecting, conscientious physician expects to be held responsible for his results when they come within the limits of his control. This fact in itself puts him upon his best conduct, prompts the use of the best at the command of science, skill, and the lessons of experience. The motives prompting these prosecutions, all the attendant incidents, have been and are more now than ever before very closely analyzed by courts and juries, and the animus, the mercenary motives at the bottom of them, are judicially considered. It is very rare indeed, he adds, that a physician reputable with the members of his profession and in the community is guilty in any case of willful maltreatment. He knows that such guilt, apart from criminal or civil liability, would close the doors of every honorable professional man against him and close to him all avenues of legitimate and honorable practice. If fear of the law constituted no element of restraint in the matter, self-respect and self-interest would.

From the fact of the keen scrutiny of judges and juries into these cases not one in ten of the prosecutions for malpractice against regular and reputable physicians succeeds. Yet there seems to be no avenue of escape from these vexatious, annoying, malignant, and mercenary suits.

The damage to the physician in these cases, says Dr. Price, is not in a moral and professional way. In that direction rarely are they to any extent damaging; but they vex him, take his time, the time to which his patients are entitled, break in on his business, and require the expenditure of some money in the preparation of his defense. These facts are well known to the class of patients who bring these suits and the class of lawyers who encourage them. The lawyer takes them on contingent fee—"Nothing if I can get nothing out of the doctor, and if I get anything about all I do get." He anticipates the terror of the doctor at being sued, and expects that he will pay liberally to escape being taken into court. Every case compromised encourages such annoying and time-wasting litigation and is an injustice to the profession. Such a case, says Dr. Price, should under no circumstances be compromised—not a penny for tribute, but all we have for self-defense.

A Röntgen-ray Tube with Automatically Adjustable Vacuum.—At a meeting of the Electrical Section of the Franklin Institute, Philadelphia, held on April 27th, Mr. H. Lyman Sayen, of Messrs. Queen & Co.'s laboratory, read a paper of which the following is an abstract:

The most important and yet the most imperfect piece of apparatus that is necessary for the production of X rays is the Crookes's tube. It consists fundamentally of a cathode capable of focusing a stream of "radiant matter" upon a platinum plate, the whole being inclosed in a properly exhausted vessel.

Since the announcement of the focus tube, in March, 1896, there have been few changes in the material arrangement of these parts. Many attempts, however, have been made to remedy one great defect which is inherent to Crookes's tubes, and that is the gradual rise in vacuum subsequent to their constant use. I will briefly describe some of these methods and endeavor to show why they are inefficient.

Many makers provide their tubes with a little bulb opening into the main tube and containing potassium hydrate or other material which is capable of giving off gas on being heated. When the vacuum gets too high a spirit lamp is placed under the bulb and a small quantity of vapor is given off, which lowers the vacuum the desired amount. It has further been suggested to use a resistance coil around the bulb and to regulate the heat by means of an auxiliary source of current.

Another scheme, as suggested by Dr. William Morton, of New York, is to seal a small incandescent lamp on the main bulb, the two bulbs opening into each other, and to bring down the vacuum by passing an auxiliary current through the lamp filament.

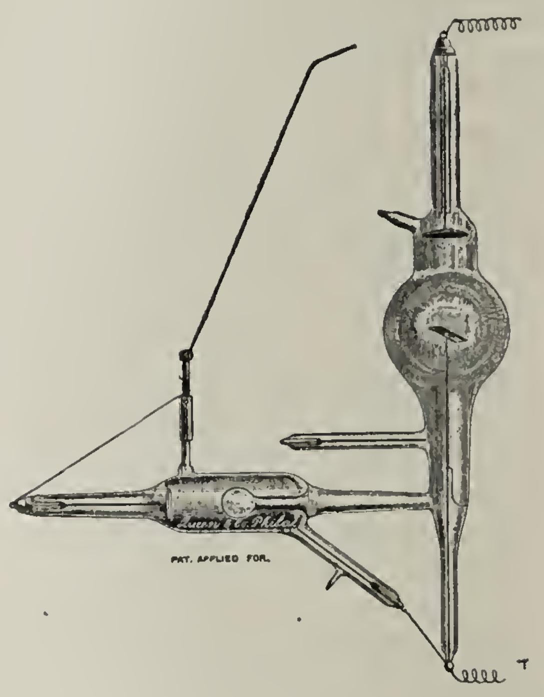
Siemens & Halske, of Berlin, have recently put on the market a Röntgen-ray tube in which the vacuum is adjusted in a most ingenious manner. A small bulb containing an internal electrode to which external connection can be made is connected to the main tube. This bulb contains phosphoric vapors, which have the property of condensing when traversed by an electric current. To raise the vacuum the electrode of the bulb and the cathode are connected to the induction coil. Warming the bulb causes the phosphorus to revaporize and lower the vacuum.

In all these schemes the vacuum may be varied over wide limits and the life of the tube is increased to an indefinite extent, but, as they all depend on the skillful manipulation of the operator, it is seldom that they accomplish the desired result. The vacuum in a Röntgen-ray tube can only vary over very small limits and, being also dependent on the temperature of the tube, it is in a very unstable position. That is, if a tube starts to heat when running, the vacuum lowers and the tube takes more current, due to the increased conductivity of the gas therein, lowering the vacuum still more, while a reverse condition of affairs takes place if the tube cools. So it will be seen that it is very difficult and often impossible to keep the temperature of the tube and to manage the regulating device to produce the desired result. One way of using these devices is to lower the vacuum the desired amount and to keep it low by running with the platinum hot enough to keep the vacuum down.

The ideal regulating device should possess the following qualities: 1. It should act immediately. 2. It should be independent of the temperature of the tube. 3. It should keep the desired vacuum.

Having in mind the difficulties mentioned and the qualities desired, Messrs. Queen & Co. authorized me to proceed in their laboratory with a series of experiments which have resulted in the device which I will now describe.

A reference to the illustration will make the operation of this device clear. A small bulb, containing a chemical which gives off vapor on being heated and reabsorbs it when it cools, is directly connected to the main tube and surrounded by an auxiliary tube which is exhausted to a low Crookes's vacuum.



In the auxiliary tube the cathode is opposite to the above-mentioned bulb, so that any discharge through it will heat this bulb. This cathode is connected to an adjustable spark point which may be placed at any desired distance from the cathode of the main tube. The main tube is exhausted to as high a degree as possible in the first place while running hot, and the chemical in the small bulb is rid of enough of its gas to insure its remaining high at all ordinary atmospheric temperatures.

In operating, the induction coil is connected as usual to the main bulb. On starting the coil, the vacuum of the main tube being high, the resistance is also high and the current takes the path of the least resistance through the auxiliary tube, thereby heating the chemical in the small bulb. This will continue for a few seconds until a sufficient amount of vapor has been driven into the main tube to permit the current to go through it. After this only an occasional spark will jump across the spark gap to maintain the tube at the same vacuum. The vacuum may be set high or low by placing the spark point a considerable distance from or close to the cathode of the main tube.

I have here before you on the table a tube of this pattern connected to a large induction coil specially constructed by Queen & Co. for Röntgen-ray work. The coil gives a fourteen-inch spark and runs in a most quiet manner on the 110-volt circuit. By means of a resistance in the base I can regulate the current in the primary to any amount desired up to the limit of the coil. This fluorescent screen, behind which I have placed a thick book, will show any difference of penetrability of the Röntgen rays due to difference of vacuum. On starting the current you see the main tube remains dark and the spark jumps across the spark gap. Almost immediately the large tube lights up. It is now possible to increase the current and you can see that it is possible to get the platinum anode brightly incandescent without lowering the vacuum in the least, as shown by the brilliant fluorescence on the screen. I shut off the current and bring the spark points together; on my starting the coil the main tube lights up at a very low vacuum, so low that there is no fluorescence produced at all.

The tube has now the characteristic appearance of running on an alternating current. The reason for this is that the resistance of the tube is so low that the secondary of the coil is practically short-circuited, and by its mutual induction decreases the self-induction in the primary, allowing the current to rise more quickly on the make, producing considerable current in the secondary in the reversed direction. This effect is not so noticeable on battery circuits, because the impressed electromotive force is not so high on the make. I will not run much current through the tube at this point, because it blackens the bulb considerably, due to disintegrated platinum when the platinum becomes the cathode.

If I put a short spark gap in series with the tube and secondary, you will notice that the alternating effect disappears and it is now perfectly safe to increase the current. I should advise all experimenters who desire to keep their tubes from blackening, that in using tubes where the platinum is the anode (and with the platinum as the anode we get undoubtedly better X rays) they should use a similar spark gap in this manner. The sparking distance should be greater than the coil will spark on the make, and it is especially desirable where it is necessary to run on low vacuum with 110-volt primary.

On separating the spark points, you see the vacuum rises slowly in the main tube until the spark prefers to jump across the gap. The tube now runs quite steadily without flicker, a small intermittent spark being sufficient to keep the vacuum down.

I will now connect the coil to the heating tube only and run it lightly for a few seconds, so as to drive considerable gas into the main tube. On connecting again to the main tube, it will be noticed that the vacuum is so low that the gas is simply a conducting stream between the terminals such as we recognize in a tube exhausted to two millimetres of mercury.

Supposing we assume, after Sir William Crookes, that the vacuum necessary to produce X-ray effects is about one millionth of an atmosphere (this is a low enough assumption at any rate), this bulb then contains enough gas to fill this whole hall at that high vacuum, so that the life of such a tube, barring misuse, should be practically unlimited. From even this most severe treatment the tube rapidly recovers and is now working in its normal state.

I will conclude with a brief summary of the advantages which I think a tube of this kind possesses over the ordinary type:

1. Adjustable vacuum. It may be set at any vacuum desired, from one so high that no current will penetrate it to one so low that the current would rather go through the tube than jump over a parallel spark gap of half an inch. In a radiograph of the hand, for instance, it is desirable to use a low vacuum to secure the necessary contrast between bone and flesh, while in locating foreign metallic bodies in dense tissue it is desirable to use a high vacuum.

2. Automatic regulation. At whatever vacuum it is set it will remain so long as the coil is running, without any attention whatever from the operator.

3. It will stand considerable energy without decrease of vacuum, consequently shortening the time of exposure necessary. Professor Arthur W. Goodspeed, of the University of Pennsylvania, has taken his best radiograph of the hip in three minutes with one of these tubes; he has also taken an excellent one in one minute. Dr. William M. Sweet, with the tube adjusted at high vacuum, has located foreign bodies in the eye, the pictures being taken perpendicularly across the head with an exposure of thirty seconds.

4. A long lease of life.

The New Hampshire Medical Society.—The one hundred and sixth annual meeting will be held in Concord on Monday and Tuesday, May 24th and 25th, under the presidency of Dr. Abel P. Richardson, of Walpole. Besides the president's address, the following papers are included in the programme: The Degeneration of Eyes, by Dr. Thomas Hiland, of Concord; Glaucoma, by Dr. H. DeW. Carvelle, of Manchester (to be discussed by Dr. L. W. Flanders, of Dover, and Dr. George Cook, of Concord); A Report on Gynæcology—the Treatment of Uterine Displacement, by Dr. N. W. McMurphy, of Concord (to be discussed by Dr. O. W. Goss, of Lakeport); Mucous Colitis, by Dr. Haven Palmer, of Plymouth (to be discussed by Dr. Thomas Hiland, of Concord, and Dr. George C. Blaisdell, of Contoocook); A Report on Foreign Bodies in the Alimentary Canal in Children, by Dr. M. S. Woodman, of West Lebanon (to be discussed by Dr. James A. Leet, of Enfield); Acute Cerebral Meningitis, by Dr. G. H. Greeley, of Thornton's Ferry (to be discussed by Dr. F. E. Kittredge, of Nashua); Some Obstinate Forms of Eczema, by Dr. C. S. Abbott, of Laconia (to be discussed by Dr. A. Harriman, of Laconia); Phlebotomy, by Dr. James A. Leet, of Enfield (to be discussed by Dr. W. T. Smith, of Hanover); Some Surgical Cases from my Note-book, by Dr. Frank Blaisdell, of Goffstown (to be discussed by Dr. J. Frank Robinson, of Manchester); Suits for Malpractice, by Dr. A. S. Wallace, of Nashua (to be discussed by Dr. I. G. Anthoine, of Nashua); On Autopsies, by Dr. I. L. Carpenter, of Manchester (to be discussed by Dr. D. S. Adams, of Manchester); Anæsthetics, by Dr. H. J. Achard, of Manchester (to be discussed by Dr. D. S. Adams); The Causes and Recent Treatment of Neurasthenia, by Dr. John D. Quackenbos, of New London (to be discussed by Dr. L. G. Hill, of Dover); and When to Call a Surgeon in Acute Abdominal Affection, by Dr. George W. Gay, of Boston.

The Nature of the Xanthomata.—Dr. S. Pollitzer, of New York, read a paper on this subject at the recent meeting of the American Dermatological Association. The peculiar yellow plaques and nodules in the skin known as xanthoma, he said, had been the subject of extensive studies on the part of pathologists and dermatologists ever since they were first described by Addison and Gull, in 1850. The greatest diversity of opinion existed as to their nature. This was due, probably, in part to the fact that different authors had examined different stages of the disease, and in part to the fact that the different forms of xanthoma had been assumed to be merely different clinical manifestations of the same process. The author's histological studies were based on thirteen cases; five of them cases of xanthoma planum palpebrarum, four of xanthoma tuberosum multiplex, and four of xanthoma diabeticorum. The clinical grounds for separating xanthoma of the eyelids from multiple xanthoma were as follows: The nodules of xanthoma multiplex were firm, round, elevated papules; the patches of eyelid xanthoma were soft plaques at the level of the skin. Eyelid xanthoma persisted through life; multiple xanthoma, sooner or later, underwent involution. Eyelid xanthoma was quite common; multiple xanthoma was extremely rare. If the eyelids were in this preponderating degree the seat of predilection for a common xanthoma, we should expect to find the eyelids affected in every case of multiple xanthoma; but, as a matter of fact, the two forms were rarely associated in the same individual.

With the extensive material at his command, the author had been able to show that common eyelid xanthoma was not a new growth, but is due to a generation of pre-existing, embryonally misplaced striped muscle tissue. The so-called xanthoma cell was a fragmented muscle fibre in a state of granulo-fatty degeneration, with proliferation of the muscle-cell nuclei. The various stages of the change from normal muscle fibre to xanthoma cell were demonstrated in sections under the microscope, drawings made by Dr. Ira Van Gieson, and microphotographs.

This explanation of the origin of eyelid xanthoma harmonized with a number of previously unexplained clinical and pathological facts; *e. g.*, the absence of any clinical signs of tumor; its almost exclusive occurrence in the face, where peculiar muscular conditions prevailed; its heredity; its usual development after middle age, when degenerative processses were apt to occur; the peculiar yellow pigment that was always present in muscles undergoing fatty degeneration, etc.

The structure of multiple xanthoma was shown to be wholly different from that of eyelid xanthoma. It formed a sharply circumscribed tumor in the cutis. It was an irritative hyperplastic development of connective tissue whose cells produced fibrous tissue on the one hand, or underwent fatty degeneration on the other. In diabetic xanthoma the process was a little more diffuse and the tendency toward fatty degeneration more marked than in the non-diabetic multiple xanthoma. In both, irregular patches of granulo-fatty matter interspersed with cellular detritus occurred in the middle of the nodules as the result of the fatty degeneration of the cells.

In over eighty-five per cent. of the recorded cases of multiple xanthoma, far too large a number to be accounted a mere chance, there was either diabetes or some severe lesion of the liver, with jaundice. The author thought it likely that further research might show that the fibrous nodes and fusiform enlargements of tendons in chronic rheumatism were to be placed in the same general class as the nodes of xanthoma. We should then have a large group of diseases, hepatic, diabetic, rheumatic, all characterized by toxæmic conditions, in all of which irritative connective-tissue lesions occurred in the skin and elsewhere. At one end of this series we should have the persistent fibrous node of rheumatism; at the other, the transient nodule of diabetic xanthoma; while between them, intermediate in its tendency toward the formation of fibrous tissue and fatty degeneration, ultimately undergoing involution, would stand the nodule of common multiple xanthoma.

A Case of Poisoning with Aloes.—The *Progrès médical* for April 24th contains the following account of a curious case of poisoning which occurred at a fair in Paris: A man was selling a yellow powder which he said had the property of causing those who took it to make faces. A number of inquisitive persons gathered around the man, who then proceeded to make experiments while advertising his wares. He threw a pinch of the powder into a glass of water and then asked some one present to drink it. A young boy stepped forward and drank the contents of the glass. He repeated the experiment twice without expressing the least repugnance in his face, but suddenly, almost before the third glass was emptied, he was seen to stagger and throw himself on the ground in great pain. The people gathered around the boy, and the man, seizing the opportunity to make his escape, ran away, leaving his basket of wares behind him. The boy was taken to a hospital, where, owing to prompt and unsparing attention, the physicians hoped to save his life. The basket was seized and taken to the municipal laboratory for analysis of the contents. On the same day the police arrested another man who was selling a brown powder which he said was pulverized aloes.

Adaptation in Pathological Processes.—This was the subject of Dr. William H. Welch's presidential address delivered at the recent meeting of the Congress of American Physicians and Surgeons. He described adaptive processes as those causing some sort of adjustment to changed conditions due to injury or disease. Physiological adaptation was a familiar and striking phenomenon full of purpose. In the existing order of Nature, the mechanical theory was our only working hypothesis in biology. Physiological adaptation by organic evolution gave the key to the study of pathology.

Compensatory and adaptive manifestations resulted from energy acting upon living matter. The final result did not influence the chain of events. A mechanical explanation of the process must be sought for. Pathological adaptations had their foundation in physiological processes, but the former were decidedly imperfect. They were divided into the compensatory hypertrophies, the regenerations, and the protective processes. Among the first work hypertrophies, as illustrated by cardiac hypertrophies, were especially important. Such resulted from changes in the individual cell, not from increased supply of blood or lymph. Cell properties determining the character of the pathological process were original physiological properties.

Applying these conclusions to the study of inflammation, we found that this was an adaptive pathological process without special fitness justifying extravagant statements recently advanced for it. In general, the healing power of Nature was overestimated. In the light of modern knowledge, there was ample scope for the intervention of the physician and surgeon.

The Annual of the Universal Medical Sciences.—We learn that the editorial department of the *Annual* and of the *Universal Medical Journal* is to be transferred from Paris to Philadelphia.

THE NEW YORK MEDICAL JOURNAL, MAY 22, 1897.

Original Communications.

THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM AND ITS CONSTITUENT NEURONES,

AS REVEALED BY RECENT INVESTIGATIONS.

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(*Continued from page 656.*)

THE great numbers of medullated fibres passing more or less in bundles from the dorsal fasciculi into the gray substance had been generally recognized and could not indeed have very well been overlooked, so prominent a part of the picture do they form in sections of the medullated spinal cord stained by Weigert's method (*vide* Fig. 11). The observers thought them to be (1) medullated axis cylinders passing from the cells of the gray matter into the white fasciculi, and (2) fibres of the dorsal roots and fibres of the dorsal white fasciculi turning in to terminate in the gray matter. Cajal proved that the majority of these did not represent main axis cylinders at all, but were collateral branches, a finding which has been confirmed over and over again by subsequent investigators in all countries.* They represent structures of enormous importance, a large portion of them (*Reflexcollateralen* of Kölliker) representing the most direct path of nerve communication between the sensory surfaces of the body and the ventral horn cells governing the voluntary muscles. We find in the sensory fibres, with their subdivisions and collaterals given off at different levels of the cord and medulla,† the anatomical mechanism concerned in the simple and more complex reflexes, and probably in many of the instinctive reactions, and we have thus, as His says, not far to go to find the explanation of the well-known fact that the same sensory impulses which permit consciousness to be affected also account for the setting free of reflexes.

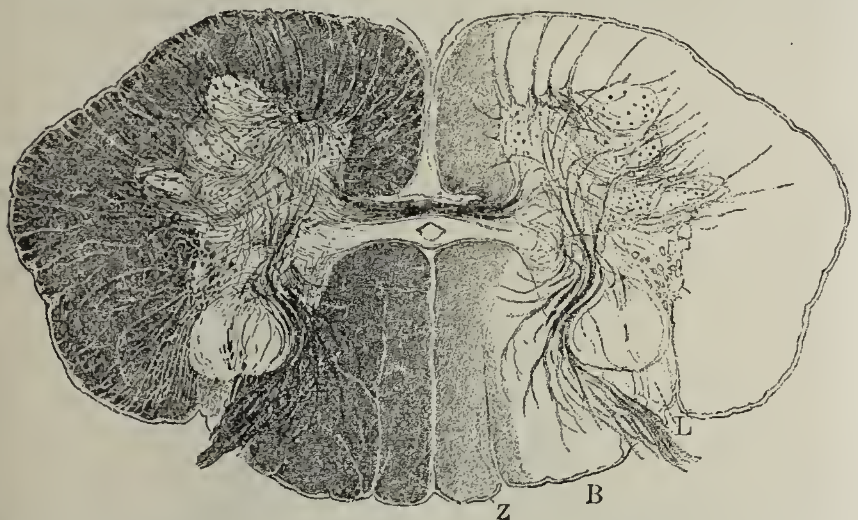

FIG. 11.—Cross section of cervical spinal cord of child two years old, showing medullated collaterals passing in from the dorsal fasciculi and running forward toward the ventral horns. (After von Kölliker.)

Amid manifold variations in type, Golgi had been struck with the wonderful similarity of the nerve cells throughout the whole of the central nervous system. He had even, it will be remembered, attempted to reduce all nerve cells to the two types before mentioned, and from his studies regarding the mode of distribution of cells of these types he had concluded that the first type of nerve cells belonged to the motor or psycho-motor, the second type to the sensory or psycho-sensory regions.* With the advent of Ramón y Cajal's demonstrations the distinctions between these two types lost, in the main, the significance which had been attached to them. The only essential difference between cell Type I and cell Type II was shown to lie in the length and mode of branching of the axis cylinder. Whereas that of the first type first showed an end arborization at a considerable distance from the cell, that of the second type broke up almost immediately after leaving its cell of origin into its terminal filaments. While cell Type I, through its long axis-cylinder process going directly over into a nerve fibre, was put into position to affect other cells in widely distant domains,† cells of Type II, whose axis-cylinder processes rarely, if ever, left the gray matter, were destined to influence other cells in the immediate neighborhood. These latter in all probability rarely act as servants of main conduction, but are to be looked upon as having a definite local function, probably of no mean significance.‡ They occur in motor as well as in sensory areas, and there is no ground at all for attributing to them, as Golgi did, an exclusively sensory function. Further evidence has recently been forthcoming in that transitional forms between the cells of Type I and those of Type II have been described. Kölliker and von Lenhossék, for example, have described cells in the spinal cord (Fig. 12) with axis cylinders which, in addition to manifold branching, give off one main stem which acts quite like the axis-cylinder process of cell Type I, and recently von Bechterew * has referred to similar forms among the stellate cells of the molecular layer of the cerebellum (Fig. 13).

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* Some of the fibres of the dorsal roots certainly enter the gray matter before undergoing the Y-shaped division; some medullated fibres pass from the gray matter backward (centrifugal fibres of dorsal roots and fibres of dorsal fasciculi whose cells of origin are situated within the gray matter of the cord).

† It was Kölliker who showed that the sensory cranial nerves underwent Y-shaped division in almost exactly the same manner as the spinal sensory nerves.

* Golgi, in his article entitled Anatomical Considerations regarding the Doctrine of Cerebral Localization, in 1882 detailed the results of his studies on the cortex, from which he concluded that the cells of Type I and Type II were not separated from one another in the single convolutions, but were always associated with one another in all parts of the cortex, and that accordingly there were not only evidences against the strict separation of the two main functions, sensation and movement, but also positive grounds for the assertion that in the different cortical zones there was no absolute separation of the sensory and motor functions, and that the anatomical seats of these functions must to a certain degree be intermingled. It is surprising how near—even with false premises—an approach to actual relations can be arrived at!

† The axis cylinders of some of the pyramidal cells of the cerebral cortex attain a length of nearly one metre.

‡ These cells have been designated as *Schaltzellen* by some writers, *intermediate cells* by Schäfer, *Vereinigungszellen* by von Bechterew. The term *association cells* has also been applied to them. The name *Dendraxonen*, applied by von Lenhossék, seems to me most suitable as distinguishing them from cells of Type I or *Inaxonen*. Schäfer's name *projection cell* for cell Type I may easily lead to confusion, and I think is better avoided.

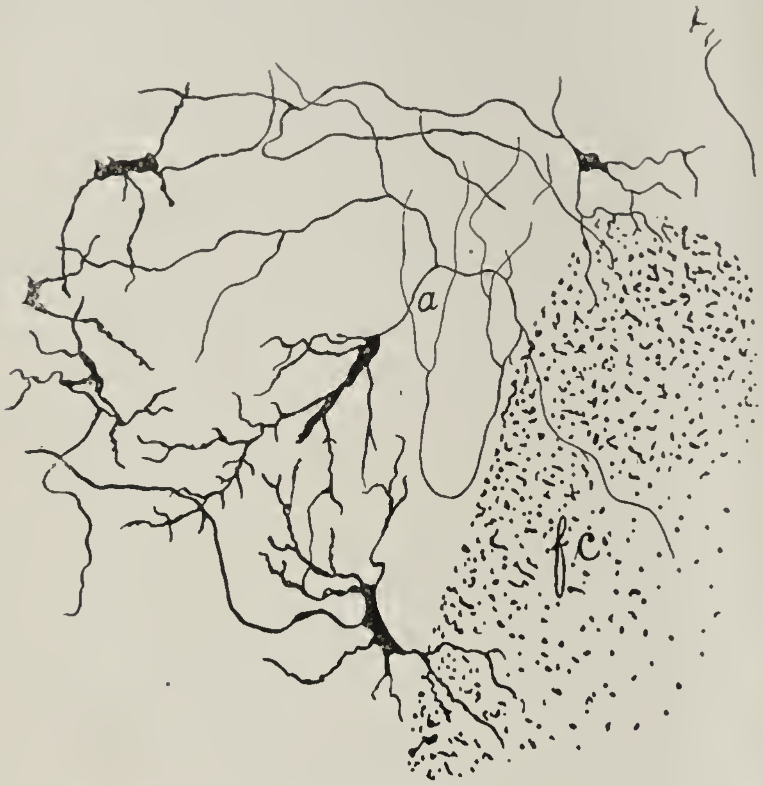

Fig. 12.—Cell from the gray matter of the spinal cord representing a form intermediate between that of Golgi's cell Type I and that of Golgi's cell Type II. (After von Lenhossék.) The much-branched axis-cylinder process *a* can be followed into the fasciculus cuneatus of Burdach, *f. c.*

It has become obvious, therefore, from the striking general morphological agreement, that if we are to seek for data regarding the functional characteristics of nerve cells, we must look for them elsewhere than simply in the external form relations which they manifest; even the direction assumed by an axis-cylinder process does not always permit a decision as to the motor or sensory function of the cell to which it belongs. While perhaps the majority of sensory axones in the central nervous system run upward and of motor axones downward, there are plenty of exceptions to this, among them the descending limbs of the divided dorsal root fibres.

Ramón y Cajal's application of the Golgi staining, almost of the nature of a rediscovery, attracted the most widespread attention, and anatomists everywhere casting other problems temporarily aside, set to work with the silver stain. In Germany, Kölliker,† von Lenhossék, Waldeyer, and Edinger; in Belgium, Van Gehuchten; in Sweden, Retzius; in England, Schäfer and Andriezzen; in America, Berkley and Strong, to say nothing of a whole host of other investigators in this and other countries, went busily to work with the osmo-bichromate mixture and silver nitrate, and within a surprisingly short period we have been supplied with information regarding the form and local reciprocal relations of the neurones in the most various portions of the cerebrospinal and sympathetic nervous system. The views advanced by Golgi and Ramón y Cajal have been most thoroughly sifted, have undergone manifold confirmation and certain necessary corrections, until at the present we are in a position to form a concept of the organization of the nervous system, clearer, sharper, simpler, and more pleasing than could have been even imagined by the most fanciful dreamer of two decades ago.

Satisfactory and convincing as were these results with the silver method obtained by all who tried for them, the new ideas received important support, indeed, were in part established, through another method invented by one who fairly deserves the name of "chemical magician"—Ehrlich, of Berlin. To have worked out through chemical considerations a method for the differential color analysis of the leucocytes which has revolutionized our ideas of the blood and elevated hæmatology almost to a special branch of medical science; to have inaugurated with experiments with ricin and abrin a new era in investigations on immunity and antitoxine therapy; to have illustrated by the methods of staining living nerve cells and their processes with methylene blue the possibilities of an experimental pharmacology of which we could scarcely have dared hope, would surely have been enough in days less liberal than ours to have con-

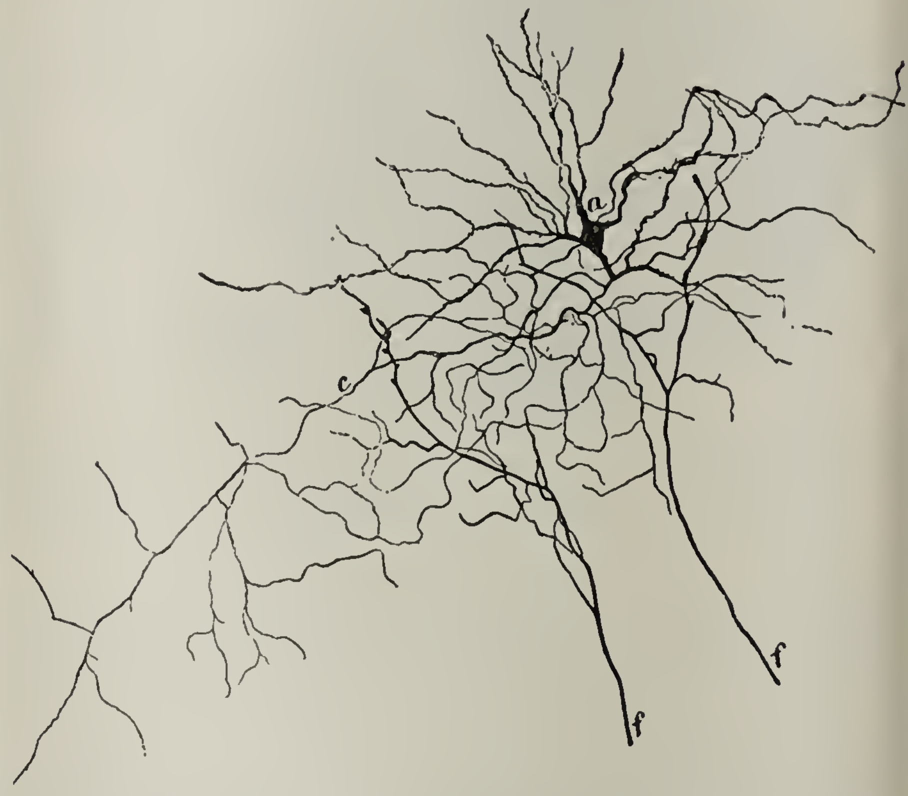

Fig. 13.—A transitional form, *a*, between Golgi's cell of Type I and cell of Type II from the molecular layer of the cerebellum. (After von Bechterew.) The much-branched axis-cylinder process *c* retains its identity for a considerable distance from the cell body. The fibres *f, f,* are axis-cylinder processes of other neurones which are giving off branches in the neighborhood of the cell *c* and its protoplasmic processes.

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* Von Bechterew, W. Die Lehre von den Neuronen und die Entladungstheorie. *Neurol. Centralbl.*, 1896, Nos. 2 and 3.

† Kölliker visited Golgi in 1887, and called attention in that year to the great significance of the Italian's observations (Cf. Die Untersuchungen von Golgi über den feineren Bau des zentralen Nervensystems. *Anat. Anzeiger*, 1887, No. 15, p. 480). From this time on he has busied himself extensively with the silver method, and has made contributions of very high importance for the development of the neurone concept of the nervous organs.

victed their author of witchcraft and of being a menace to the common weal. Ehrlich realized that the ordinary histological methods of fixing and subsequent staining, though yielding important anatomical conclusions regarding the structure of the tissues, fail to give us very exact information regarding the properties of the living cells. Concerning pharmacology, it is his idea that a definite toxic substance can affect only those elements primarily to which it actually arrives and by which it is taken up in a specific manner. If such is the case, the determination of the laws governing the distribution of the substance are of prime importance, and the physiological action of the drug should be brought into accord with these.* On account of our poverty in micro-chemical reactions it was impossible for him at the time to experiment satisfactorily in this way with the alkaloids, but with certain aniline dyes the problem could more easily be approached. Experimenting along these lines, Ehrlich found that by injection of a solution of methylene blue dissolved in salt solution *intra vitam* into the blood-vessels of an animal, the axis cylinders of many of the nerve fibres (Fig. 14) as well as numerous (particularly sensory) nerve endings (Fig. 15) were stained after a time, when exposed to the air, an intense blue color, the other tissue elements remaining little or not at all affected. The staining was of only short duration, the color gradually fading, and with the fading, as a rule, more or less diffuse staining of the other tissues occurred.

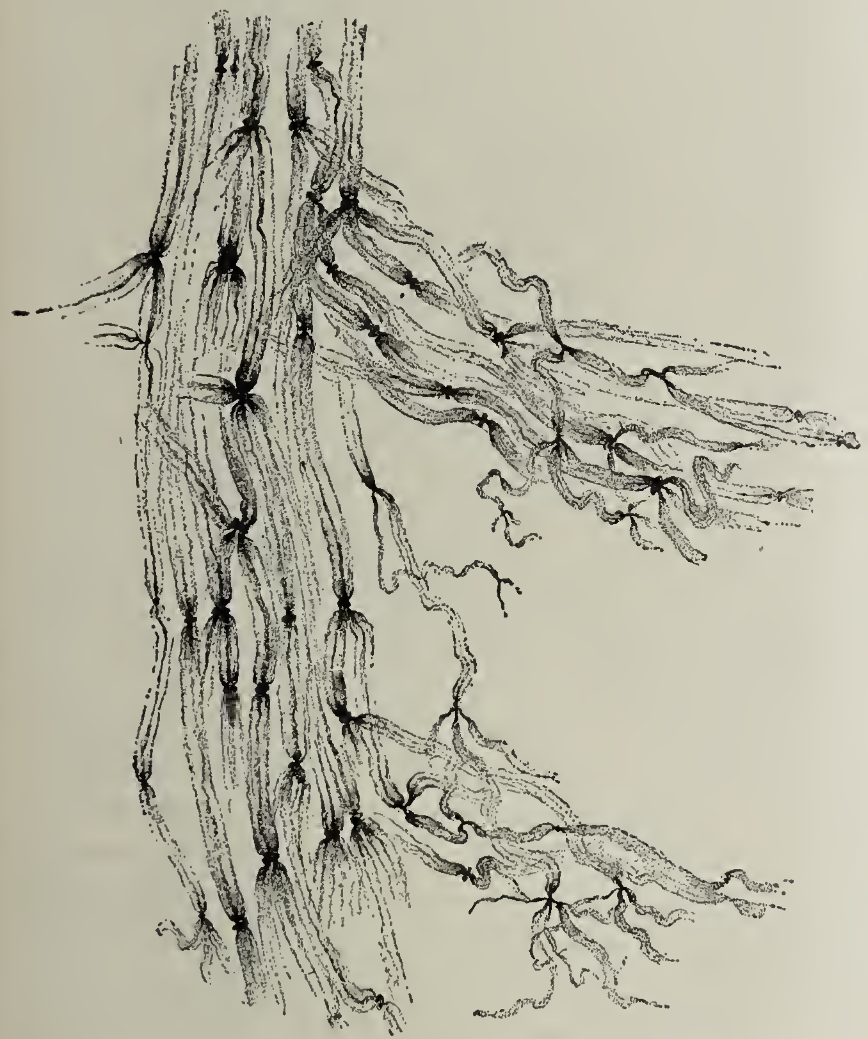

Fig. 14.—Nerve fibres from a frog injected with methylene blue. (Method of Ehrlich.) The axis cylinders are stained dark blue. In places the myelin sheath is somewhat stained. The nodes of Ranvier and the divisions of the fibres at some of the nodes are well shown. (After Kölliker.)

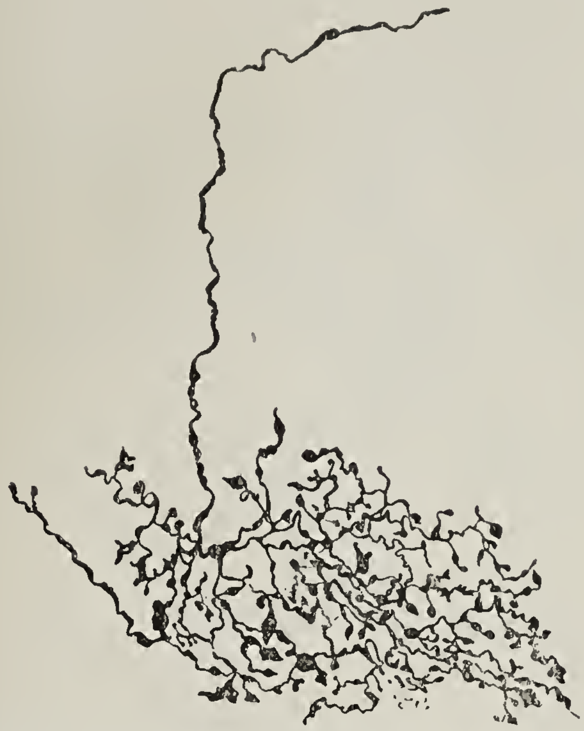

Fig. 15.—Sensory nerve ending stained with methylene blue (Method of Ehrlich) in the exocardium of the left auricle of a gray rat. (After Smirnow.)

Ehrlich made some interesting comparative tests with dyes closely allied to methylene blue in order to determine if possible a chemical explanation of the staining. Thus, he found that while fuchsin, methyl violet, and saffranin, which contain no sulphur, would not stain the nerves, thionin and dimethylthionin as well as methylene violet yielded a reaction similar to that obtained with methylene blue, so that the presence of one basic group (of one ammonium residue) in the molecule (instead of two, as in methylene blue) appeared to suffice for the reaction. He further experimented with the expensive sulphon of methylene blue (*Methylenazur*) and found that he could obtain with it the nerve staining, so that it appeared to be a matter of indifference whether the sulphur in the molecule exists as a phenylsulphide or as a phenylsulphon. Finally, he made tests with Bindscheidler's green (*Dimethylphenylengrün*), which differs from methylene blue only in lacking sulphur. This substance, which is distinctly poisonous, will not stain the nerves, so that Ehrlich concludes that it is the entrance of sulphur into the molecule which determines the nerve coloring, although he reserves his judgment as to the exact rôle played by this element. The conditions in the nerve structures essential to the methylene-blue reaction he thought were (1) oxygen-saturation; (2) alkalinity. Whether or not he still holds to these ideas expressed in 1886, I am unable to say.

It was soon shown by Arnstein that injection *intra vitam* was unnecessary for the reaction, he having shown that as long as the tissues remained alive injection into the dead animal gave results equally good. Mayer asserts that even several days after death the reaction is sometimes obtainable, and combats the idea of a "vital" staining. Certain it is that sections of tissue cut with a Valentin's knife soon after removal from the body and laid in a weak solution of the dye, stain beautifully. This fact I can assert from my own experience with human as well as with animal tissues.

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* Ehrlich, P. Ueber die Methylenblaureaction der lebenden Nervensubstanz. *Deut. med. Woch.*, 1886, No. 4, p. 49.

One serious objection to the methylene-blue method was the transience of the staining. Attempts were made to overcome this, Pal using iodide of potassium, Smirnow iodine and iodide of potassium, Dogiel an aqueous solution of ammonium picrate, Mayer and Retzius ammonium picrate and glycerin as a fixing agent, but no one of these methods was entirely satisfactory, and the preparation of thin sections of the stained and imperfectly fixed tissues remained an impossibility. Through the fortunate introduction of a fixing agent, which we owe to Bethe,* this difficulty has been almost entirely overcome, and it is now possible not only to fix beautifully the structures at the height of the staining, but also to imbed the tissues thus fixed in paraffin, which permits of the preparation of sections of any desired thinness and so to counter-staining by means of suitable dyes, for example, alum-cochineal.†

I have laid some stress upon the introduction of the methylene-blue method, but not more, perhaps, than its importance warrants. As von Lenhossék has said, until the introduction of the Golgi stain, no one probably had seen a nerve cell with all its processes—a complete nerve unit in its totality. But even with the Golgi stain not every element impregnated can be followed throughout its whole extent. Indeed, it is perhaps the rule that where the medullary sheath begins the silver impregnation of the axis-cylinder process ceases. The staining of nerve endings in adult structures with the Golgi method, even with double and triple impregnations, succeeds only rarely. But just here lies the great value of Ehrlich's method. With a little care and a good sample of methylene blue the nerve endings and the axis cylinders of medullated fibres, with which they are continuous, can be stained in a way far surpassing in constancy and completeness the best results of the uncertain gold chloride procedure. Already most important contributions have been made with this method by Ehrlich, Dogiel, Retzius, Smirnow, Ramón y Cajal, von Lenhossék, Symonowicz, Huber, and others, and it may safely be predicted that with the recent improvements it will be much more widely and successfully applied. That the method is also applicable to the study of pathological tissues removed by operation from human beings has been shown by the researches of Young, in which by means of it he has been able to demonstrate the presence of nerves in certain tumors.*

The results hitherto attained with Ehrlich's methods have confirmed and elaborated those of the Golgi methods, except, perhaps, in one particular. Some observers, notably Dogiel, the distinguished Russian histologist, have maintained that in the methylene-blue specimens an anastomosis of the protoplasmic processes of one and of neighboring nerve cells can be demonstrated. Indeed, if his illustrations represented the actual conditions, we should have to modify our ideas of the relations of nerve cells as conceived of in the contact theory, for he has pictured not only the anastomosis in the retina of the dendrites of the nerve cells, but also a network formed by the union of axis-cylinder processes as well as the origin of nerve fibres from axis-cylinder networks and from networks of dendrites. Masius † also maintains that the dendritic processes anastomose with one another. This view, so inimical to the doctrine of the morphological and physiological independence of the nerve units, has been stoutly denied by Ramón y Cajal, von Lenhossék, and others, who have studied specimens stained both with Golgi's and Ehrlich's method, and it has been subjected to an especial searching criticism recently by Bouin.‡ He denies the existence of anastomoses among the retinal elements, except the branchings of the cells which possess no axis-cylinder processes. I have myself, in a considerable experience with specimens stained by the methylene-blue method, been convinced that many of the appearances which closely resemble anastomosis, especially in specimens stained in bulk or in small pieces and fixed by Dogiel's method, are really optical illusions, since after long and tedious search with oil-immersion lenses in paraffin sections of methylene-blue preparations, fixed by Bethe's method, I have never been able to find any evidence of definite anastomosis. The much-used simile, therefore, that the processes (and their divisions) of nerve cells maintain their identity throughout, interlacing perhaps with one another or with similar processes from other nerve cells, just as the branches of the trees in a dense forest may intermingle but remain independent of one another, the nerve elements being as separate and as independent as the trees and their branches and leaves, has apparently had its complete anatomical justification. Should occasional anastomoses between the processes of nerve cells be even proved to occur, the general validity of the doctrine of the independence of the neurones would not be affected.

In 1891 Waldeyer did great service to the new doctrine by bringing together within a brief compass and in a clear and convincing manner the results up to that time attained, comparing the experiments of the different investigators with one another and submitting all to his keen and critical judgment. His article perhaps has done more than any other single publication to make generally popular the doctrine of the individuality of the nerve elements for other reasons, but more especially from the fact that—and this is a point upon which von Lenhossék lays emphasis—besides his clear presentation of the established discoveries he introduced a term for the histological unit in the nervous system (including the whole element—cell body, protoplasmic processes, axis-cylinder processes, end arborization, and collaterals) (Fig. 16), dubbing it euphoniously in German *Neurôn* (Greek, ὁ νευρών; English, *neurōne*), a term which has been almost universally adopted by anatomists, physiologists, pathologists, and clinicians in various countries. Objections to the use of the word neurone as a designation for the nerve unit have been offered by Kölliker, Schäfer, and others. It is, however, so much more convenient a term than any other which has so far been suggested, and, moreover, has already entered so thoroughly into common usage, permeating the bibliography of all specialties, that I think it must be accepted; if so, the use of the term "neuron" as a name for the axis-cylinder process, as advocated by Schäfer in his admirable essay The Nerve Cell Considered as the Basis of Neurology,* is to be deprecated, and more particularly because a few distinguished teachers have been induced to continue the use of the term in this way, thus leading at times to considerable confusion. Since the word "neuron" has been employed by Schäfer to mean the axis cylinder (axone) and by Wilder to indicate the central nervous axis, the necessity of spelling in English Waldeyer's term "neurone," pronounced neurōne, is all the more obvious.†

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* Bethe, A. Studien über das Centralnervensystem von *Carcinus Mænas* nebst Angaben über ein neues Verfahren der Methylenblaufixation. *Archiv für mikr. Anat.*, 1895, Bd. xliv, s. 579. The method depends upon converting the soluble methylene-blue hydrochloride used in staining into an insoluble molybdate combination.

† With Lavdowsky's modification of Ehrlich's method, together with Bethe's fixing procedure, I have been able to demonstrate nerve endings in human and animal tissues in a manner entirely superseding any other method known to me. The comparison of the gradual appearance of structure after structure and of detail after detail in the tissue during the staining to the development of a photographic negative, an illustration employed by Lavdowsky, is very apt. If the stain be pushed too far the picture becomes clouded, owing to diffuse staining of the other tissues with the blue—it has been "overdeveloped."

* Young, H. H. On the Presence of Nerves in Tumors, etc. *Journal of Experimental Medicine*, 1897, vol. ii, No. 1, p. 1.

† Masius, Jean. Recherches histologiques sur le système nerveux central. *Arch. de biol.*, tome xii, 1892, p. 151.

‡ Bouin. *Bibliographie anatomique*, 1894, No. 3.

Enough has been said, I hope, to make clear what is meant by the "neurone-concept" of the nervous system. To sum it up in a few words: The nervous system, aside from its neuroglia, blood-vessels, and lymphatics, consists of an enormous number of individual elements or

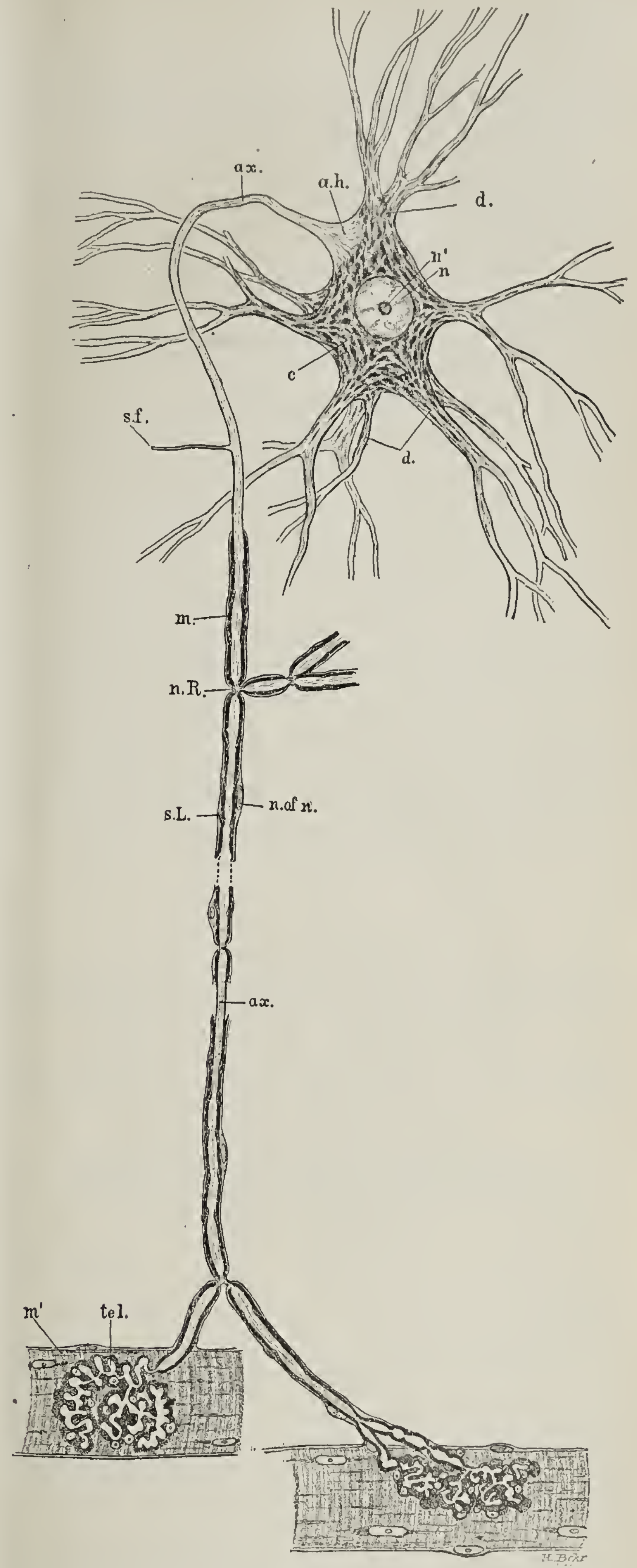

FIG. 16.—Schematic representation of the lower motor neurone. The motor cell from the ventral horn of the spinal cord, together with all its protoplasmic processes and their divisions, its axis-cylinder process with its divisions, side fibrils, or collaterals, and end ramifications (telodendrions or motor end plates) in the muscle, represent parts of a single cell or *neurone*. *n*, nucleus; *n'*, nucleolus; *c*, cytoplasm showing the dark-colored Nissl bodies and lighter ground substance; *d*, protoplasmic processes (dendrites) containing Nissl bodies; *a. h*, axone-hillock devoid of Nissl bodies, and showing a tendency to fibrillation; *ax.*, axis cylinder or axone, also indistinctly fibrillated. This process, at a short distance from the cell body, becomes surrounded by a myelin sheath, *m*, and a cellular sheath, the neurilemma; *n. R.*, node of Ranvier; *s. L.*, segmentation of Lantermann; *n. of n.*, nucleus of neurilemma sheath; *tel.*, motor end plate or telodendrion; *m'*, striped muscle fibre.

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* Schäfer, E. A. *Brain*, vol. xvi, 1893, p. 134.

† Kölliker (*Handbuch der Gewebelehre des Menschen*, 1893, Bd. ii, S. 2) states his objection as follows: "Das Wort *Neurôn*, *Neuronen*, das gut klingt, kann sprachlich nicht gebraucht werden, wie vorgeschlagen wurde, denn es bedeutet einen Sammelpunkt vieler Neuren oder Nerven. Von den Worten Neurodendren und Neurodendridien ist das letztere, obschon länger, als Uebersetzung von Nervenbäumchen doch vielleicht entsprechender." The adoption, however, of the better sounding word is in this instance easily intelligible, and, moreover, is not without many a precedent, as the philologist must sorrowfully grant. In the present case, however, Professor B. L. Gildersleeve, of the Johns Hopkins University, informs me that Kölliker's objection to νευρών will not hold, as it would apply equally well to παρθενών, which means "the house of the virgin." While the spelling *neurone* is not pleasing, for that matter neither are the spellings *anode* and *cathode*, which, after the analogy of *method*, should be spelled *anod* and *cathod*, but, under the circumstances, in order to anglicize Waldeyer's term, the use of the word and spelling *neurone* seems, as Professor Gildersleeve says, to be inevitable. *Cf.* Barker, L. F. Concerning Neurological Nomenclature. *Johns Hopkins Hospital Bulletin*, November and December, 1896.

neurones. Each neurone in its entirety represents a single body cell. These units are from the first and continue throughout life to be morphologically, and hence necessarily in a sense physiologically, independent of one another, the cell bodies or processes of the neurones never coming into any connection with one another, except by contact or contiguity. There is no evidence of the existence of a diffuse nerve network either in the sense in which von Gerlach or in that in which Golgi used the term. The axis cylinder of every nerve fibre, just as much as every protoplasmic process, is an integral part of a neurone, and has an organic connection somewhere with a nerve cell. Nerve conduction paths may, and probably usually do, in higher animals at least, involve more than one neurone, the neurones being, as it were, superimposed upon one another to make simple or more complex neurone chains or chains of neurone groups, one individual neurone through its various processes being in a position to be affected by and in turn to affect several or many other neurones. Notwithstanding almost infinite minor variations in form, the neurones in the most different parts of the nervous system present surprisingly similar general external morphological characteristics. The nerve life of the individual, including all his reflex, instinctive, and volitional activities, is the sum total of the life of his milliard of neurones.*

(To be continued.)

AN OPERATION FOR THE CORRECTION OF EXTERNAL AND INTERNAL DEFORMITIES OF THE NOSE

CAUSED BY DEFLECTION OF THE CARTILAGINOUS NASAL SÆPTUM.†

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Perhaps no one condition in the human nose has withstood the onslaught of the modern rhinologist more persistently than that of a markedly deflected cartilaginous sæptum. Numerous and ingenious have been the operations devised and carried out to place back, in its straight and narrow path, this obstinate but misguided support to the external structure of the nose. Rhinological literature for years has teemed with descriptions of new operations which promised to successfully bolster up twisted and distorted sæpta, and as each new method was promulgated there have been found expectant followers to test its worth and power of endurance.

It is not too much to say of these buried hopes that they accomplished their purpose for the time being, and then gradually permitted a return of the conditions that existed before operative methods were brought into play. Selecting any one of these methods at random, and conceding that an operator was able to follow out the technique as suggested by the originator, there has always been one invincible test to be applied to it—namely, that of time—before a claim for success of the operation could be established.

Many operations have been performed during the past fifteen years that seemingly assured enduring results and justified one in believing that, at last, one could promise to straighten, permanently, a deflected cartilaginous nasal sæptum.

Mournful to relate, the result has been more or less of a disappointment, as evidenced by a return of the patient to the clinic, say six months later, with a dejected face, an occluded naris, and a reappearance of all the symptoms that had caused him to seek relief at the surgeon's hands. Naturally enough, a weary repetition of experiences of this nature has made the older generation of nasal surgeons a trifle skeptical about the merits of any new operation for the correction of sæptal deflections, especially when it is claimed for a particular one that it need never be followed by failure.

Without going into details as to the comparative value of the methods of operation as suggested by Gunn, Bolton, Chassaignac, Steele, Jarvis, Roe, Daly, Adams, and others, I would like to call attention to a paper read by Dr. Morris J. Asch at a meeting of the American Laryngological Association, held in Baltimore, Md., May, 1890. At that time Dr. Asch stated for his method of operating on a deflected cartilaginous nasal sæptum that it would insure a stable correction of the deformity and a cessation of the symptoms due to that condition.

Clinical notes that are accessible and have been made since the reading of that paper, showing in the neighborhood of sixty operations performed by the writer of this paper and his *confrères* at the Manhattan Eye, Ear, and Throat Hospital, confirm the statements made by Dr. Asch at that time. There have been failures to the number of three, averaging less than one for each member of the hospital staff who has tried the operation. Two of these failures were the result of the initial trials of the method by two members of the staff, and, as acknowledged by these gentlemen, were due to their not thoroughly carrying out the technique as prescribed.

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* According to the estimations of Meynert, the cortex of the cerebral hemispheres alone contains twelve hundred millions of ganglion cells. Donaldson (*The Growth of the Brain*, p. 159) states that for the total number of nerve cells in the central nervous system three thousand millions is a moderate estimate. It may be recalled that Francke (*Die menschliche Zelle*, 1891, p. 27) has estimated the total number of cells, leaving out the red blood-corpuscles, in an adult human body to be about four billions (3·996 billions). The most accurate estimates of the total number of red blood-corpuscles at our command make the number about twenty-two billions and a half, making a total of twenty-six billions and a half (26,500,000,000,000) of body cells. Donaldson's estimate for the nerve cells would, therefore, make them represent one nine-thousandth of the total number of cells of the body, or one thirteen-hundredth of the total number of cells exclusive of the red blood-corpuscles, an estimate which probably falls below rather than above the truth. All such calculations are necessarily extremely crude, but afford opportunity for interesting study.

† Written for the Annual Report of the Manhattan Eye, Ear, and Throat Hospital, 1896.

The third bad result was due to a compulsory abandonment of the after-treatment on account of an acute otitis media that manifested itself a few days after the operation. It was an error of judgment on the part of the writer in advising and performing an operation at that time, as the subject was an undersized, poorly nourished Italian lad, seven years of age. A year later, the boy's system having been built up with tonic treatment and proper diet, he was again subjected to an operation which was a marked success, and to-day, three years afterward, his cartilaginous nasal sæptum is in its proper place.

In reference to the test of time that has been mentioned elsewhere, it may be said that if at the end of one year from the date of discharge from treatment the patient shows a sæptum that is in the same upright position that it was placed in at the operation, it may fairly be regarded as a successful result.

There has been some slight change made in the operation as at first outlined, but the principle of a crucial incision and its application, with a thorough destruction of the resiliency of the cartilage, has always remained the same and insured a good result.

The readers of this paper are referred to the original article by Dr. Asch, published in the *Transactions of the American Laryngological Association,* 1890, for the history and early methods of after-treatment as then practised by him.

The routine method described here is the one that has been followed at the Manhattan Eye, Ear, and Throat Hospital since 1891. The patient, lying on his back, having been etherized to a point bordering on complete anæsthesia, his head is brought well over the end of the operating table, so as to be slightly dependent. This position of the head is necessary to facilitate the escape of blood from the nose and pharynx by gravitation, and to decrease the liability of its entrance into the larynx and trachea. The ether cone being removed, the head of the patient is held firmly between the hands of the anæsthetizer, and the operator introduces a little finger into the stenosed naris to determine the point of greatest convexity of the cartilaginous sæptum. If this is found impossible on account of existing adhesions between the sæptum and the lateral wall of the nasal fossa, a curved gouge is used to sever the obstructing bands of tissue. Having located the point of greatest deflection, the operator carries into the stenosed naris the non-cutting blade of the Asch angular scissors, and the other and wider blade into the opposite naris. The incision is then made through the sæptum by approximating the handles of the instrument, and is accompanied by a snapping sound that is characteristic of the completion of the act. On the proper performance of this first incision is dependent, to a great extent, the result of the operation. It should be made parallel with the plane of the floor of the nose and through the point of greatest convexity of the sæptum. The hæmorrhage is decidedly brisk from now on, but, as the patient is by this time only in the primary stage of anæsthesia, with a restoration of the reflexes, no danger of asphyxiation from inspired blood need be feared. The second incision is now made with the straight pair of scissors at right angles to the previous one and intersecting it as nearly as possible at its centre. The patient is now turned over on his side and the accumulated clots of blood are allowed to flow from his pharynx and nasal fossæ; a little more ether is given, and after a return of the patient to his former position an Adams's sæptal forceps is introduced, one blade in either nostril, and each one of the four fragments of cartilage is seized in turn, separately, and subjected to a twisting motion sufficient to loosen its articulation. In this way all resiliency of the cartilage is overcome, and on passing a finger into the previously stenosed naris it will be found that all resistance has disappeared and the finger can be easily carried through into the posterior naris. If it is not perfectly free, the Adams forceps should be reintroduced, and the refractory fragment subjected to the same process as before. If the resiliency of the cartilage is not thoroughly destroyed the object of the operation will be defeated.

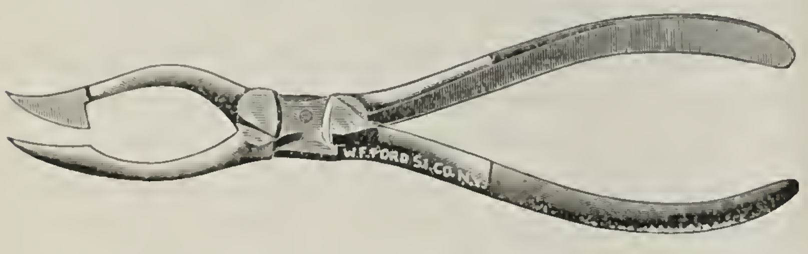
The amount of traumatism capable of being borne by the sæptal cartilage of the nose without untoward effects is simply astonishing, and for that reason one need not be timid about attacking it with vigor.

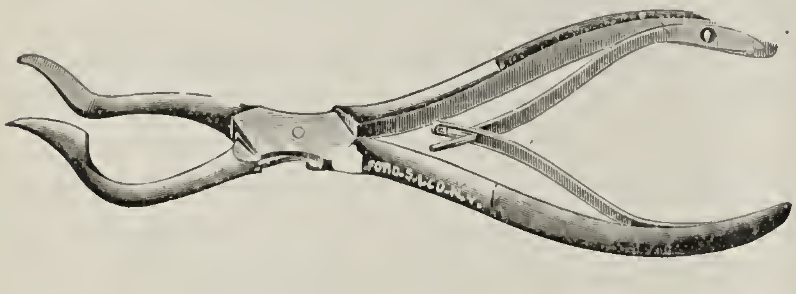
When the previous step of the operation has been satisfactorily completed, one of the patterns of vulcanite perforated nasal tubes devised by Asch and modified by McKernon is then inserted in the formerly obstructed naris. Care should be used, in choosing a tube, to see that it is sufficiently large to hold the sæptum in the position desired, and, at the same time, it should not be of such proportions as to cause painful and uncalled-for pressure. A tube so large that it requires any considerable amount of force to place in position will surely cause an intolerable degree of pain to the patient when consciousness is regained, whereas one of a proper size will be worn without the slightest discomfort to the patient.

After the introduction of the tube hæmorrhage ceases spontaneously, and the patient is put to bed for thirty-six or forty-eight hours. Twelve hours having elapsed since operation, the nasal chambers are irrigated with a warm borated solution at intervals of two hours; the temperature is taken three times daily, and a rise of from one half to one degree is sometimes observed on the first and second days. The tube is removed at the end of the third day, the nasal fossæ are sprayed with a ten-per-cent. solution of cocaine to shrink the soft parts, and a thorough cleansing is given with a gentle alkaline spray.

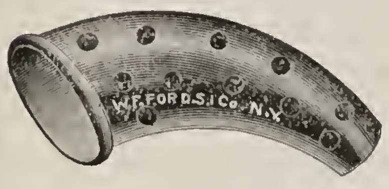
Usually there is considerable swelling of the intranasal tissues, but the tube is readily reintroduced, and the patient allowed to go about his usual pursuits; he should be seen every other day for some time, and after the first week is instructed to remove the tube himself, morning and night, for cleansing purposes. The tube should be worn for at least six weeks to give an opportunity for the thorough union of the parts.

Inspection of the intranasal conditions for the first week after operation is apt to be somewhat disheartening to the operator, from the fact that there is a good deal of inflammatory reaction of the soft parts and the overlapping of the segments of cartilage causes a decided impairment of the calibre of the naris. However, an occasional cleansing and spraying of the membranes with a solution of oil of eucalyptus in fluid albolene, and the mild pressure exerted by the nasal tube, induce an absorption of the redundant cartilage, and soon clear up the field of vision.

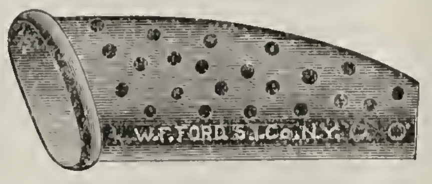




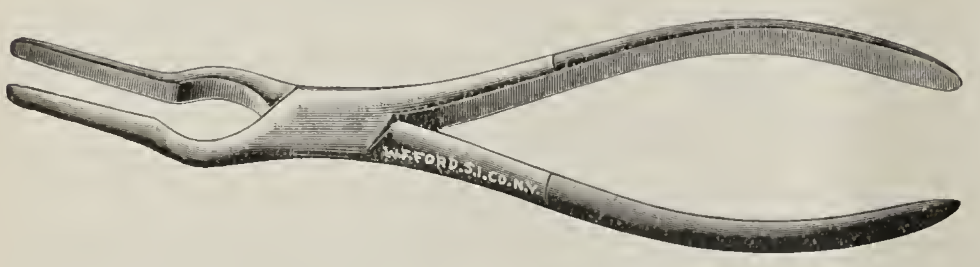
If there is an enormous ecchondrosis over the apex of the convexity it may be advisable to saw it off either before or at the time the sæptum is fractured under ether; thickening to a moderate degree at this point will not require an operation for removal, but will be dissipated by the presence of the tube.



The Asch tube.



The McKernon tube.



The special instruments devised by Dr. Asch are an undoubted aid to the proper performance of the operation, not only allowing a quicker and neater execution of it, but a much more accurate placing of the incisions.

Still, if one has not the instruments at hand, it may be done with a bistoury (using a finger in the patent nostril as a guide to the length of the incisions) and an Adams sæptal forceps. In selecting an Adams forceps, one with blades not more than an inch and a quarter in length, and that do not tend to converge at their distal ends, will be found most useful in grasping the fragments of cartilage.

Frequently the nasal surgeon is consulted about and is requested to remove the unsightly external deformity caused by a deflected cartilaginous sæptum that has so outgrown its normal limits that it has twisted the tip of the outer nose around to one side of the face. In these cases the subjects are apt to be much more interested in the correction of the deformities for the cosmetic effect than in the amelioration of the symptoms produced by them.

My practice has been in such cases to carry out the operation as previously described, and to supplement it with an incision with a bistoury, along very nearly the whole length of the upper two fragments, where they join the soft tissues covering the dorsum of the nose. This extra incision gives a greater opportunity for the readjustment of the fragments when the forceps is applied and the tip of the nose is brought around into the median line. In a few of these cases it will be found of advantage to augment the pressure of the large tube in the stenosed naris with a much smaller one in the opposite side.

There can be no gainsaying the necessity for a reliable surgical procedure that will correct a deflected cartilaginous nasal sæptum. One has only to pass in review, in one's mind, the local and remote disturbances produced by a much-deflected nasal sæptum to acknowledge the desirability of being able to restore it to its proper place.

The writer does not believe that simply because a nasal sæptum is slightly deflected, or is not symmetrical, it must of necessity be operated upon. It is only when one or more of three conditions are present that surgical interference should be thought of and used. These conditions are as follows:

I. When the respiratory function of a nasal fossa is seriously impaired or entirely lost.

II. When drainage of the secretions from the mucous membranes lining the accessory sinuses or nasal fossæ is impeded.

III. When there is contact of the sæptum with adjacent structures that can not be overcome by simple methods, such as cauterization, snaring, curetting, and trephining with the electro-motor.

A simple enumeration of the symptoms that are produced by the foregoing conditions may, in a measure, justify the amount of space taken by this article:

Mouth breathing, caused by occlusion of one or both nasal fossæ.

Drainage of the secretions of the accessory sinuses and nasal fossæ into the postnasal space.

Perverted secretion or supersecretion in the nasal cavities.

Headaches, frontal and occipital.

Diseases of the accessory sinuses.

Catarrh of the Eustachian tubes.
Chronic rhinopharyngitis and laryngitis.
Rhinitis vasomotoria periodica.
Asthma, reflex.
Spasmodic stricture of the œsophagus, reflex.
Epilepsy, reflex.
Chorea, reflex.

The operations on which the conclusions of this paper are based were, for the most part, undertaken for the relief of the common, "everyday" symptoms of mouth breathing, inability to clear the nose of retained secretions, headaches, and impaired hearing.

Cuts of the several special instruments mentioned in this article are given on page 688, one third actual size. The cuts of the nasal tubes represent the largest of six sizes in use for the operation.

313 Madison Avenue.

CULLEN:

HIS PLACE IN THE HISTORY OF THE PROGRESS OF MEDICINE.

By FRANKLIN STAPLES, M. D.,
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William Cullen was born in Lanarkshire, Scotland, in 1710. He was of a family in poor circumstances, and what opportunity he had for early education does not appear. In his youth he was obliged to labor in various ways for means to obtain the knowledge which, in time, made him "one of the most celebrated physicians of the eighteenth century." His biography is read with interest. He was a barber, then an apothecary. He studied surgery and pharmacy at Glasgow, went to London in 1729, and thence to the West Indies as surgeon in a merchant vessel. Returning to Scotland, he studied in Edinburgh, began practice at Hamilton on the Clyde, and there became the friend and partner of William Hunter. It is said of these young physicians that, in order to gain a higher education, they alternated between the school and the field of practical labor; while one was by practice earning the necessary means, the other attended the university. Cullen graduated in 1740, and in 1745 became professor of chemistry at Glasgow. Both Cullen and Hunter, beginning as they did, became distinguished men, and the works of each have a large place in the history of medicine. John Hunter, of London, the younger brother of William, was a surgeon of still greater reputation. William Hunter expended £100,000 upon his establishment. The Hunterian Museum of the University of Glasgow remains as a part of his collections in normal and pathological anatomy. Cullen died without an estate.

The title of an old book which is at hand, and which is of itself a record, reads as follows: *A Treatise of the Materia Medica*, by William Cullen, M. D., Professor of the Practice of Physic in the University of Edinburgh; First Physician to his Majesty for Scotland; Fellow of the Royal College of Physicians of Edinburgh; of the Royal Societies of London and of Edinburgh, of the Royal Society of Medicine of Paris, of the Royal College of Physicians of Madrid, of the American Philosophical Society of Philadelphia, of the Medical Society of Copenhagen, of the Medical Society of Dublin, of the Royal Medical, and of the Royal Physico-medical Societies of Edinburgh. In Two Volumes. Edinburgh 1789. Among the other works of Cullen was his *Synopsis Nosologiæ Methodicæ*, Edinburgh, 1769. *Nosology*, or the classification of diseases on the natural-history plan, had before him been begun by Sauvages, but was by him carried out to great length, and became an important part of his method of instruction. Other works were: *Physiology, for the Use of Students in the University of Edinburgh*, Edinburgh, 1785, and *First Lines of the Practice of Physic*, London, 1777. This was an extremely popular book, and was several times reprinted and translated. An American edition was printed in New York in 1805.

Cullen is said to have been a charitable man; is reported to have supported the widow of Robert Burns, and to have published the works of the poet. He died in 1790.

Dr. Thompson, in his *History of Chemistry*, says of Cullen: "He claims a conspicuous place as the true commencer of the study of scientific chemistry in Great Britain." His teachings of science were given in a clear and attractive form.

The Nervous Pathology of Cullen.—In his physiology and pathology Cullen was a "solidist." The terms "solidist" and "fluidist" had a more important significance, as applied to the adherents of opposing systems in medicine, at the time of Cullen than at the present time. With him the nerves were the chief instruments of action, and the power that acts in the body through the nerves was called the "nervous force," the "nervous principle," the "energy of the brain." The grounds for the theory of the therapeutical action of medicines is concisely expressed in the first chapter of his *Materia Medica* as follows: "In these days," he says, "it is hardly necessary to show that the action of other bodies upon the human is chiefly by the impulse of these bodies upon the extremities or other parts of the nerves of the human body; in consequence of which a motion is propagated from the place of impulse along the course of the nerves to their origin in the brain or medulla spinalis; and that upon such occasion there does, for the most part, arise a sensation. This again generally gives occasion to a volition, whereby a motion is produced, which being determined along the course of the nerves into certain muscles or moving fibres, the actions of these, as well as the various effects which their action is suited to occasion, are in consequence produced." In this the author makes no distinction in the actions of the different parts and functions of the nervous system, implying that the nature and principle of nerve action is the same in all. The term nervous pathology, as here used, applies to the part taken by the various parts of the nervous system in disease, rather than merely to what may be called diseases of the nervous system.

Cullen came to be a teacher in Edinburgh at a time when systems in medicine, especially in the Dutch and German schools, were regarded as the necessary groundwork for instruction. His teaching and writing were in the latter half of the eighteenth century; the century which has been designated as that of theories and systems. In the preface of his *First Lines of the Practice of Physic* he observes: "Whether the practice of physic should admit of reasoning or be entirely rested upon experience has long been and may still be a matter of dispute." At this time the better part of the medical world had advanced away from much of the superstitions of ancient practice and the delusions of the middle ages, and the vagaries of Paracelsus and others of the kind were largely in the past. The study of what of ancient delusions has remained and appears in different forms at the present time is not without interest in its relation to the past.

As preparatory to the advancement of science at the time of Cullen, Sanctorius had taught the mechanical system of medicine in Italy, Hermann Boerhaave his eclecticism at Leyden, Frederich Hoffmann his mechanicodynamic system at Halle, Gerhard van Sweiten and Anton de Haen had founded the old Vienna school; Thomas Sydenham, who has been called the English Hippocrates, was teaching in London the importance of combining facts from observation with theory in medicine, and many discoveries and inventions had made possible a further advance in medicine as well as in other departments of science and art. Among the contemporaries of Cullen were Bordeu in Paris, Barthez at Montpellier, and Reil at Berlin, the apostles of "vitalism"—the "vital force" being in this the life and motive power of the body.

Reviewing further the preface of *First Lines*, we find a sketch of the doctrines of Paracelsus, which, in the minds of the minority only, had overthrown the Galenic system. Then follows an allusion to the mathematical reasoning of Galileo and the inductive method of Lord Bacon. Then he observes: "The knowledge of the circulation of the blood did indeed necessarily lead to the consideration, as well as to a clearer view of the organic system in animal bodies, which again led to the application of the mechanical philosophy toward explaining the phenomena of the animal economy."

He continues: "From all these circumstances," which he mentions, "an humoral, and chiefly a chemical pathology, came to prevail very much till the end of the last century" (the seventeenth); "and has indeed continued to have a great share in our system down to the present time" (about 1775). "It is proper now, however, to observe, that about the beginning of the present century" (the eighteenth), "when every part of science came to be on a more improved and correct footing, there appeared in the writings of Stahl, of Hoffmann, and Boerhaave, three new and considerably different systems of physic." Then follows a description of what is contained in the three new systems. The system of Stahl is expressed in this: "That the rational soul of man governs the whole economy of his body." According to Cullen, Hoffmann had opposed this theory, and both Boerhaave and Haller, though no favorers of materialism, had mentioned a doctrine very opposite to that of Stahl.

This historical sketch by Dr. Cullen, it must be understood, is given in the preface of his *Practice of Physic*, which is the embodiment of his nervous pathology. He quotes extensively from Hoffmann's *Medicina Rationalis Systematica*, and remarks concerning it as follows: "It is true that Dr. Willis had laid a foundation for this doctrine (Hoffmann's) in his *Pathologia Cerebri et Nervorum*, and Baglivi had proposed a system of this kind in his *Specimen de fibra motrici et morbosa*. . . . But Dr. Hoffmann was the first who gave any simple and clear system on the subject, or pointed out any extensive application of it to the explanation of disease." Cullen closely followed Hoffmann and Haller, basing his doctrine of nerve action on the "irritability" taught by the latter.

Dr. Cullen further observes: "There can be no sort of doubt that the phenomena of animal economy in health and sickness can only be explained by considering the state and affection of the primary moving powers in it." Then, in addition to what he says of Hoffmann's work in "putting us into the proper train of investigation," he mentions the following names of authors and works, as having contributed in part to the work of progress: Dr. Kaaw Boerhaave, in his *Impetum faciens;* Dr. Gaubius, in the *Pathology of the Solidum vivum;* Baron Van Swieten, in his *Commentary upon the Seven Hundred and Seventy-fifth Aphorism of Boerhaave;* Dr. Haller, in his experiments on irritability and sensibility; and M. Barthez, of Montpellier, in the study of the affections of the nervous system.

Cullen points out what he considers as the defects in the teachings of Hermann Boerhaave. He taught and wrote a little more than half a century after Boerhaave had declared his doctrines, which together were understood as the eclecticism of the times, and had given his pathology of "the stiff and elastic fibre." He says of Boerhaave, that he was "a man of general erudition; and, in applying to medicine, he had carefully studied the auxiliary branches of anatomy, chemistry, and botany, so that he excelled in each; and whoever will compare his system with that of former writers must acknowledge that he was very justly esteemed, and gave a system which at that time was deservedly valued." But, as the reason for declaring his own system, he says: "I believe there are few pages of his aphorisms in which there does not occur some error or defect; although, perhaps, not to be imputed to the fault of Boerhaave so much as to this, that since his time a great collection of new facts has been acquired by observation and experiment. This indeed affords the best and most solid reason for attempting a new system." Then follows an argument showing the importance of a system as the embodiment of facts, not only as an aid in teaching, but in practice.

The French physician Joseph Lieutaud, of Aix, in Provence, who was first physician to Louis XVI, and whom Cullen himself designates as "the first physician of a learned and ingenious nation," had published his *Synopsis of Universal Medical Practice.* This work was made on the plan of collecting facts without any reasoning concerning their causes. This plan is criticised by Cullen as one "not aiming at some system of principles by a proper induction and generalization of facts"; and, as a practical outcome of such a plan or lack of plan, he observes: "In this work there are many facts and much observation from the author's own experience, which may be useful to those who have otherwise some knowledge and discernment; but, throughout the whole work, there is such total want of method, arrangement, system, or decision, that, in my humble opinion, it can be of little use." It is to be noticed that amid the tendencies of his time to study by theory and hypothesis, Cullen inclined to the plan of founding all reasoning upon material facts. These are his words: "My anxiety is not so much to find out how it happens, as to find out what happens."

Dr. Cullen further criticises Lieutaud's works in that he mentions among diseases what should be given as symptoms only, and refers to such terms as "*æstus morbosus*," "*dolores*," "*tremor*," "*suffocacio*," "*singultus*," "*vomitus*," and "*tenesmus*," as given among diseases. This error was incident to the systems of medicine of the times, when only external manifestations of disease were observed and made the basis of classification, rather than a pathology. This has come down to the present time principally in what remains of the doctrines of Hahnemann.

Cullen, in his work, did much to advance the standard of medicine by the establishment of a methodical nosology, or an arrangement of diseases, as he expressed it, "according to their genera and species." His work in the domain of medicine may be compared to that of his distinguished contemporary, Linnæus, in systematizing the study of botany and perfecting the classification of plants. He taught that "the prevention of diseases depended upon the knowledge of their remote causes," and that "the cure is chiefly and almost unavoidably founded in the knowledge of their proximate causes. This requires an acquaintance with the institutions of medicine—that is, the knowledge of the structure, action, and functions of the human body, of the several changes which it may undergo, and of the several powers by which it can be changed." This looks like founding a system on pathology, and the last clause above quoted has significance in the author's nervous pathology, referring to "the powers which act in the body through the nerves."

The first paragraph of his introduction to *First Lines of the Practice of Physic* is comprehensive and concise. It reads: "In teaching the practice of physic we endeavor to give instructions for discerning, distinguishing, preventing, and curing diseases, as they occur in particular persons." While the *First Lines of Practice* was a popular work, the ability of Cullen as a teacher appeared especially in his *Nosology, or Classification of Diseases.* As a writer and teacher he excelled in clearness and accuracy. His biographer has it in these words: "He defined and arranged diseases with an unparalleled accuracy, and reduced their treatment to a simplicity formerly unknown."

American students whose good fortune it was to listen to the lectures of the late Professor Alonzo Clark, of New York, may recognize the resemblance of the American of the nineteenth century to the Scotchman of the eighteenth.

Among the American pupils of Cullen in Edinburgh were Dr. John Morgan, Dr. William Shippen, and Dr. Benjamin Rush, the early teachers of medicine in Philadelphia, and Dr. Samuel Bard, of New York.

A CASE OF ASTHMA AND SYMMETRICAL ENLARGEMENT OF THE ARMS

GREATLY BENEFITED BY SPECIFIC TREATMENT; MARKED EXCESS OF OXYPHILES IN THE BLOOD.

By JOHN S. BILLINGS, Jr., M.D.,
ASSISTANT TO THE CLASS OF HEART, LUNGS, AND THROAT, PRESBYTERIAN HOSPITAL DISPENSARY.

The following case was seen in the heart, lungs, and throat class at the dispensary of the Presbyterian Hospital:

L. S., a girl, aged sixteen years, born of German parents in the United States, admitted January 26, 1897, complaining of asthma and swelling of arms.

Family History.—Mother and one brother living and healthy; father died of exposure to heat at forty-seven years; one brother died in infancy. No history of tuberculosis or cancer in families of parents; no neurotic taint. No information pointing to syphilis in parents was elicited.

Past History.—Always strong and healthy; has grown very fast the last two years; had an acute attack of some disease associated with œdema of legs and body at five years of age; measles the only other disease of childhood. Her brother and herself, when quite young, suffered from some pustular affection of the skin of the face. Never had a general eruption; has always suffered from coryza; never ozænic, however. Catamenia have not yet appeared. Has never suffered from sore throat.

Present Illness.—"Caught cold" six months before admission here. This soon developed into typical asthma, with nocturnal attacks of sudden onset, ending in violent paroxysms of coughing with scanty viscid expectoration. These attacks have persisted to date, occurring in the daytime as well as at night, and the expectoration has gradually become more purulent and copious. Hoarseness manifested itself four months ago. This has steadily progressed, and at present voice is only a piping whisper. First noticed enlargement of palms and backs of hands two months ago. This progressed steadily and rapidly, involving the forearms and upper arms as high as the middle of the biceps muscles. The fingers have never been swollen, but have been cold and blue from the first. Very little pain any time in arms or hands, and no redness, tenderness, or heat. On the contrary, the hands and arms have been cold and blue since first appearance of swelling. No involvement of wrist or elbow joints, but she says she can not straighten the fingers.

Appetite has been good. No constipation or diarrhœa. No disturbance of digestion. Suffers at times from typical unilateral migraine with left-sided hemianopia and nausea. Eyesight at other times good. No abnormal frequency of micturition.

Present Condition.—Rather sparely nourished; distinctly anæmic; tall for her age; face rather long; nose slender, not flattened; expression bright; face a little cyanotic, lips quite markedly so; upper lip a little thickened and tumid; teeth slightly irregular, but well formed, and giving no suggestion of Hutchinsonian teeth. Small scar at right angle of mouth; several whitish linear scars on inside of cheeks and soft palate. Examination of throat by Dr. Bell (class head) showed pharynx to be normal; larynx small and infantile; cords somewhat anæmic; no inflammation or new growth; voice almost lost; tongue clean; temperature normal; pulse, 24 to the quarter, soft, full, and regular in force and rhythm; no thickening of vessel wall; well sustained. Corneæ clear. Ocular reactions normal. No contraction of fields of vision.

Over left parietal bone, just above the level of the ear, a small nodular swelling the size of half an English walnut. A similar swelling, but smaller, over right parietal bone. These were immovable and painless. No other enlargements of bones discovered. No cervical scars. Chest well formed, symmetrical. Expansion good and equal. Percussion note somewhat hyperresonant throughout. On auscultation, the expiratory murmur was found to be prolonged. Typical asthmatic râles and rhonchi, both medium and coarse, heard with both inspiration and expiration. Vocal resonance and fremitus apparently normal.

Heart: Apex beat in fifth space inside nipple line. Area of cardiac dullness (relative and absolute) normal. Sounds clear at apex and base. Slight relative intensification of second sound over pulmonic cartilage.

Examination of abdomen negative. No enlargement of liver or of spleen. Reflexes normal. A few small discrete glands felt in each groin. No enlargement of axillary, epitrochlear, post-cervical, or occipital glands.

Skin everywhere clear. No scars or discolorations on shins or elsewhere.

Symmetrical enlargement of hands and arms, from metacarpo-phalangeal joints to a point corresponding to the middle of the biceps muscles. Circumference of right wrist, eight inches and a half; of right forearm, just below elbow, twelve inches and a half. Skin of hands and arms cold and blue. Fingers also cold and bluish, but not swollen. Movements of wrist and elbow joints unimpaired. Fingers can not be straightened at the metacarpo-phalangeal joints, owing to swelling of hands.

Sensation impaired at metacarpo-phalangeal joints; elsewhere normal. Bones of hands, forearms, and upper arms apparently uninvolved. No pitting on pressure.

The sensation given to the examiner's fingers was that of an infiltration beneath the skin and in the muscles. Skin not thickened; freely movable. This apparent infiltration was to be well made out at upper limit of swelling, where the difference in consistence of the involved and uninvolved portions of the biceps muscles was most striking.

Examination of the blood showed the following: Red corpuscles, 3,911,000 per cubic millimetre; leucocytes, 8,300 per cubic millimetre; hæmoglobin (von Fleischl), sixty-eight per cent.

Fresh specimens showed a quite well-marked pallor of the centres of the red corpuscles, and also the presence of an unusually large proportion of oxyphilic leucocytes (eosinophiles), easily recognized by the coarse, highly refractive granulations in their protoplasm. Dried and stained specimens, taken at the same time, showed the same central pallor of the red corpuscles. No variations from the normal in size or shape of the red corpuscles (poikilocytosis and schizocytosis). Several nucleated red corpuscles (normoblasts) and a fair number of polychromatophilic red corpuscles observed. The significance of these abnormal forms will be discussed later. fully one half the leucocytes were seen to be oxyphilic, presenting a very striking picture. No abnormal forms of leucocytes seen. A differential count of one thousand leucocytes showed the various forms to be present in the following proportions:

Multinuclear, 36.1 per cent.; lymphocytes, 5.1 per cent.; large mononuclear, 5.2 per cent.; oxyphiles, 53.6 per cent.

Patient was given a cough mixture containing ten grains of iodide of potassium and one drachm of fluid extract of euphorbia in each dose, to be taken three times a day. Told to send urine and sputum.

Urine clear, yellow, no sediment. Specific gravity, 1.021. No albumin, sugar, or diazo reaction. Microscopical examination negative.

Sputum: A specimen of sputum expectorated immediately after an asthmatic attack showed typical small viscid masses which, when unrolled on black glass, showed Curschmann's spirals. Over one half the leucocytes entangled in the meshes of the spirals were oxyphiles. A few crystals, corresponding to Charcot-Leyden crystals, observed. Examination of the more purulent morning sputum for tubercle bacilli was negative.

Patient's asthma improved somewhat during the next nine days; no reduction of enlargement of arms and hands.

On February 4th patient was put on "mixed treatment" : a thirty-second of a grain of hydrarg. bichlorid. and fifteen grains of iodide of potassium. When next seen, February 16th, the greatest improvement had taken place. Asthma had almost disappeared. Only an occasional râle heard at bases on deep inspiration. Enlargement of arms had entirely disappeared, the palms and backs of hands being still somewhat swollen, giving them the appearance of being cushioned. Circumference of right wrist, five inches and three quarters; circumference of right forearm below elbow, eight inches and a quarter. Bones and skin apparently perfectly normal. Patient states that skin of arms has itched violently a dozen times since last visit, and that there was great diminution in size of arms after each attack of itching. The nodular swellings on parietal bones were hardly perceptible. Voice still piping, but by an effort she could speak in an almost normal tone.

Blood: Red corpuscles, 4,221,000 per cubic millimetre;

leucocytes, 7,400 per cubic millimetre; hæmoglobin, seventy-five per cent.

Examination of fresh and stained specimens showed the pallor of red corpuscles to be less.

Only one nucleated red corpuscle observed, and only a few polychromatophiles. Oxyphiles still present in large number. Differential count showed proportions to be: Oxyphiles, 38.2 per cent.; other forms, 61.8 per cent. Four fresh specimens were allowed to dry on the slide, and search was made for Charcot-Leyden crystals, but only one doubtful example was found. When the patient was last seen her hands were still somewhat swollen, but less so than on February 16th. No asthma.

Blood: Red corpuscles, 4,636,000; leucocytes, 7,600; hæmoglobin, eighty-six per cent.

Microscopical examination showed the condition of the blood to be vastly improved. Pallor of red corpuscles not at all marked. No nucleated red corpuscles or polychromatophiles. The oxyphilic leucocytes were still present in great numbers, as shown by the following count: Oxyphiles, 33.9 per cent.; other forms, 66.1 per cent.

The case above reported is most interesting for several reasons. It was difficult to account for the swelling of the arms, and at first sight it seemed probable that the swelling should be classed under the head of the angeioneurotic œdemas. Pure bronchial asthma is probably a reflex neurosis, and the association with it of a " blue œdema " of angeio-neurotic origin is not an unlikely occurrence. The absence of pitting and the irregular distribution of the œdema favored this view. On the other hand, the persistence of the swelling and the gradual onset and progression upward were not characteristic of angeio-neurotic œdema, which tends to vary in amount and position, and to manifest itself to its full extent at once. The possibility of the enlargement being allied to the brawny œdemas resulting from chronic passive congestion was considered, but rejected because of the absence of other signs of interference with the pulmonary circulation, such as enlargement of the right side of the heart, albuminuria, etc. The possibility of its being syphilitic was not thought of at first, the only objective signs pointing to such a diagnosis being the nodular swellings on the parietal bones and the linear scars in the mouth. These furnished the clew, and suggested the trial of specific treatment. The patient had never noticed the nodular swellings, and thought they had been there always. Considerable stress has of late been laid upon the presence of linear scars on the inner surface of the cheeks as diagnostic of syphilis. They are supposed to result from the cracking and excoriation of mucous patches. The prompt reaction to specific treatment makes it probable that the enlargement was due to a syphilitic infiltration of the muscles and of the subcutaneous areolar tissue. We are not justified, however, in stating positively that the case is syphilitic; and, moreover, it may be that, and the œdema still be angeio-neurotic, the nervous supply of the vessels being involved by the syphilitic process.

Another case, apparently similar to the one above reported, was seen at the dispensary a day or two later. The girl undoubtedly had hereditary syphilis, the facies being characteristic, and a history of syphilis in the parents being obtained. Her arms and hands were symmetrically enlarged, the fingers being also involved, and the skin of the hands and arms being cold and blue. In this case, however, questioning elicited the fact that her arms and hands had been swollen since childhood as a result of frostbite.

The condition of the blood in this case is sufficiently interesting to warrant our going into the subject at some length.

The blood shows marked oxyphilia, with distinct chloroanæmia and evidence of new formation of red corpuscles. These two conditions will be considered separately. It would take up too much space to enter here into a discussion of the various forms of leucocytes in the blood and their " specific " granulations. Those interested in the subject are referred to the various recent textbooks upon the morphology and pathology of the blood. Cabot's *Clinical Examination of the Blood* is the best book on the subject in English. The same classification into four forms, as was adopted in my article The Blood Corpuscles in Diphtheria (1), is utilized here. Those interested in the question of technique are also referred to that article.

It is enough to say that the so-called oxyphilic leucocytes, or eosinophiles, are cells about twice the size of the red blood-corpuscles, with polymorphous nuclei and protoplasm containing a number of large, coarse, highly refractive granules. These granules, when seen in fresh specimens, are greenish and resemble fatty particles. They are neither fat nor hæmoglobin, as is shown by their insolubility in ether and in water. They contain iron (Barker) and are probably albuminous. They have a strong affinity for stains in which the coloring principle is an acid—such as eosin, acid fuchsin, aurantia, etc. To this fact are due the names " oxyphiles " and " eosinophiles." The stains above referred to are not in reality acid in reaction, being neutral salts; it is simply that the staining power is due to the acid radicle of the salt. This form of leucocyte is not numerous in normal human blood, its proportion to all other forms being a half to one per cent. It is supposed by most authorities to be the last step in the development of the leucocyte, before its natural death within the body. In the alexin theory of immunity of Buchner and Hankin, an important part is assigned to the oxyphilic leucocytes in the production of these substances (alexins), which are supposed to paralyze bacterial activity and so to permit of phagocytosis. The excellent article on the pathology of infection by Kanthack in Allbutt's *System of Medicine* goes into this question most thoroughly.

The oxyphiles in the blood have been observed to be increased in number in several diseases, notably leucocythæmia and asthma. With the former we will not concern ourselves.

Müller (2) first noted the fact that the oxyphiles in the blood are increased in number in bronchial asthma. Many observers have confirmed this observation, among them Gollasch (3), Fink (4), Schwerchewski (5), Zappert (6), and Gabritschewski (7). Gabritschewski found twenty-five per cent. and thirty-three and a third per cent. of the leucocytes to be oxyphilic in two of his cases. He states that they are more numerous at the time of the attack. Schwerchewski, who noted 15.9 per cent. of oxyphiles in one of his cases, makes the same statement, and also that the onset of an attack can be foretold by the increase in oxyphiles which takes place some time previously. Zappert noted 8.77 per cent. and 12.36 per cent. of oxyphiles in the blood in cases of bronchial asthma.

The fact that the leucocytes in the sputum of persons suffering from bronchial asthma are largely oxyphilic has been noted by von Noorden (8), Leyden (9), Schmidt (10), Seifert (11), Fink (*loc. cit.*), and others. Charcot-Leyden crystals are also found in such sputum, and the relation between these crystals and the oxyphilic leucocytes is evidently a very close one. These crystals are found also in leucæmic blood where the oxyphilic leucocytes are present in large numbers. Fink (*loc. cit.*) found sixty-five per cent. of the leucocytes in asthmatic sputum to be oxyphilic, and the blood in the same case showed 14.6 per cent. of oxyphiles. The case here reported confirms all the above-quoted statements. The number of oxyphiles in the blood (53.6 per cent.) was greater than in any other case I have been able to find in the literature of the subject. The great number of this form of leucocyte and of Charcot-Leyden crystals in the sputum was also very striking. The oxyphiles in the blood, while relatively greatly increased in number, of course bear a small relation to the total number of corpuscles (red and white), the proportion being about 1 to 1,122. This is sufficient reason for our not finding the Charcot-Leyden crystals in the dried specimens. An increase in the number of the oxyphilic leucocytes in the blood of syphilitics has been noted by several observers. No observation of more than ten per cent. has been recorded, however. The question as to the source of this increase in the number of oxyphilic leucocytes in the blood in asthma is an unsettled one. Gabritschewski (*loc. cit*) holds that the ordinary polynuclear leucocyte, which under normal conditions forms from sixty to eighty per cent. of the total number of all the forms in the blood, undergoes a pathological alteration of its protoplasm which, from being finely granular and neutrophilic, becomes coarsely granular and oxyphilic. Leyden (*loc. cit.*), on the other hand, holds that the oxyphilic leucocytes are the result of local new formation—*i. e.*, they are formed in the mucous membrane of the bronchioles.

Excellent general articles on the oxyphilic leucocytes are those of Zappert (*loc. cit.*), Neusser (12), and Schwarze (13).

Turning now to the question of chloro-anæmia, we find that many observers have noted this condition in syphilis.

Laache (14) first described the anæmia of syphilitics. Among the numerous observers who have investigated this subject are Luzet (15), Scheff (16), Bergrun and Monti (17), and Loos (18). Many of them found the anæmia to resemble markedly that seen in chlorosis. In the latter disease the anæmia is not due so much to a decrease in the number of the red corpuscles as to a still more advanced reduction of the amount of hæmoglobin in each red corpuscle. In an ordinary secondary anæmia there is no reduction in the amount of hæmoglobin in each corpuscle; only the number of the corpuscles is reduced, so that the percentage of hæmoglobin sinks only as low (relatively) as the number of red corpuscles. In chlorosis and chloro-anæmia however, the hæmoglobin is relatively far below the red corpuscles; indeed, the number of the latter may be nearly normal and yet the anæmia be most marked. In our case the hæmoglobin was sixty-five per cent. and the number of red corpuscles 4,000,000 per cubic millimetre. The hæmoglobin is relatively much lower than the number of corpuscles, and to correspond with 4,000,000 corpuscles per cubic millimetre should be at least eighty per cent.

Loos (*loc. cit.*) draws attention to the fact that the blood in anæmia due to hereditary syphilis very often shows the presence of nucleated red corpuscles and of polychromatophilic red corpuscles. Examples of both of these abnormal elements were observed in the blood in the case here reported.

The nucleated red corpuscles were always normoblasts —*i. e.*, of the same size and shape as a normal red corpuscle, and showing the same staining qualities, but possessing a round nucleus, a fourth to a fifth the size of the corpuscle, which stained very deeply. The presence of such corpuscles in the blood is evidence of increased new formation of red corpuscles. Such new formation is brought about by a preceding degeneration or destruction of red corpuscles, the demand upon the blood-forming organs for new red corpuscles being so great that immature normoblasts appear in the circulation. The so-called polychromatophilic red corpuscles are corpuscles which, when stained with Ehrlich's acid hæmatoxylin-eosin, take on a violet color instead of a bright red, the normal red corpuscles being stained the last-named hue. The presence of such corpuscles in the blood was at first held to be evidence of degeneration (Ehrlich (19)), but more recent investigations (Gabritschewski, *loc. cit.*) tend to show that they are evidence of regeneration rather than degeneration. The principal argument in favor of this view is the fact that the hæmoglobin of many of the nucleated red corpuscles seen in the blood in pernicious anæmia exhibits this polychromatophilic staining reaction. Lack of space forbids any discussion of the interesting reaction which the red corpuscles and hæmoglobin in the blood of syphilitics are said to undergo under the influence of mercury, and which Justus (20) thinks to be of great diagnostic value.

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32 East Thirty-first Street.

SUPPURATIVE MASTOIDITIS.

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The operation of mastoidectomy, as well as the differential diagnosis of the various forms of mastoid disease requiring interference for their relief, come most appropriately within the scope of the aural surgeon.

Not even the most experienced surgeon can tell, when a case of suppurative ear disease involving the bone structures is presented to him, how far the same has extended, or how extensive the destruction. Many cases can not be thoroughly operated upon without invading the brain tissue or the lateral sinus, and some cases are accompanied by deep burrowing of pus in the neck, either anteriorly or posteriorly. He who undertakes the responsibility of this operation must be fully equipped in his knowledge of the anatomy of the skull and its contents, and possessed of a surgical skill and instinct not inferior to those of any general or special surgeon.

It is of interest to every one carrying the title of M. D. to have some general and clearly defined ideas in every specialty.

Some knowledge of the ætiology, prophylaxis, symptoms, history, and tendencies of the diseased ear and its neighboring bones will often teach the practitioner to be on the alert, and to recognize in its early stages a condition upon the cure of which hearing and even life itself may depend.

I present a few clinical records of cases I have operated upon at the Eye and Ear Infirmary, and shall endeavor to point out some items of special interest.

It is worthy of note that the most common cause of suppurative mastoiditis is acute suppurative otitis media, and when it supervenes upon a chronic otitis it is usually preceded by an acute exacerbation.

Back of this, it should be remembered, are catarrhal conditions, exanthemata, dyscrasiæ, etc.

Case I. *Acute Purulent Otitis Media; Suppurative Mastoiditis.*—Charles W., aged one year and a half. This patient was brought to the outdoor service of the New York Eye and Ear Infirmary on March 4, 1896.

There was great tenderness back of the left ear, with heat and redness; also a profuse discharge from the ear, which began two weeks previously. Temperature, 99.5°. Seven months before, I had operated upon the right mastoid of this patient for similar conditions, with a successful result. The old wound was perfectly cicatrized.

I now did the usual mastoid operation upon the left side. It was unnecessary to employ a mallet, owing to softness of the bone. With gouge and curette the mastoid antrum was thoroughly cleansed of pus and granulations, which were present in considerable quantities; also some of the surrounding bone was removed, being carious and infiltrated with pus.

March 5th.—I dressed the wound; there was very little discharge. The temperature at midnight had gone up to 103.2°, but at 3 p. m. this day it dropped to 102.°

The wound was dressed daily, and irrigated with bichloride solution (1 to 5,000); the bowels were kept free by giving, when needed, a tenth of a grain of calomel every hour. At 6 a. m., March 6th, temperature 101.2°, subsequently ranging mostly below 100°. The temperature usually fell after dressing the wound.

The diet was strictly fluid, consisting of milk, gruel, and beef tea.

10th.—Six days after operation the temperature was normal, the wound filling up with healthy granulations, and the child was discharged from hospital. Subsequent treatment was given in the outdoor department until the wound had fully granulated and the discharge ceased. Inspection at this time showed the former perforation filled by cicatricial membrane, and the drum membrane in a healthy condition.

Case II.—Charles B., aged eight years, a bleeder, admitted to hospital April 3d at 1 p. m. Pulse, 112; temperature, 100.2°; respiration, 26. Profuse discharge from the ear and tenderness behind it, especially over the tip of the mastoid bone; tissues somewhat puffy. I directed the cold coil to be applied, and the ear irrigated with bichloride solution every three hours; a tenth of a grain of calomel every two hours until bowels moved. At 3 p. m., temperature 101.3°; five grains of phenacetine administered. At 6 p. m., temperature 101°, and at midnight 99°.

April 4th, forenoon.—Discharge from ear less and thinner, but during the day he complained much of pain. At 3 p. m., the temperature being 101° and no further sign of improvement, I decided to operate.

Pus was found in the mastoid antrum, which was thoroughly cleaned out. The opening in the bone was made wider at the surface than in its deepest part, and all suspicious portions in the exposed surface were curetted away. Wound irrigated and dressed in the usual manner.

After the operation the temperature fell, and at 9 a. m. the following morning was 99.7°.

The subsequent history was about as usual—the bowels were kept free, pain was relieved with phenacetine, the wound was dressed daily, and a liquid diet was given.

The highest temperature reached was on the fifth day, when at noon, and again at 3 p. m., it was 102°. From the 6th on, it ranged but little above the normal. The pulse and respirations maintained their normal relations.

The following case was one of much interest, and also of much solicitude to me, as all the conditions were very unfavorable to recovery.

Case III.—Frances M., aged a year and a half, a nursling. The mother relates that she had nasal diphtheria two months ago. The right ear began to discharge soon after, and the mastoid region became swollen and tender. The left ear also has discharged slightly.

Present Condition.—Right mastoid very much swollen, red, and tender to the touch; much discharge from the right ear, some from the left; child pale and weak; temperature, 100.8°.

April 11th, 2.30 P. M.—Temperature, 102.5°. Made a free incision down to the bone, which was rough and yielding under the knife. Considerable pus welled up from the wound. It was necessary to curette away a large portion of the mastoid bone, for it was extensively necrosed. While doing this as gently as possible, the instrument passed into the middle cerebral fossa, there being no healthy bone intervening. Much pus and granular tissue, as well as necrosed bone, was removed. The wound was packed with iodoform gauze and thickly overlaid with the same, and with bichloride gauze and absorbent cotton, and finally a bandage applied.

After the operation the temperature fell, and at 9 p. m. was 100.7°, but rose at midnight to 105.4°. It is important to note that the night preceding the operation, and much of the time since, the child had a troublesome cough, which at times interfered with sleeping.

The mother stated that two weeks ago a physician had told her her child had pneumonia. At the present time auscultation and percussion failed to reveal that condition.

The child, however, appeared to be tuberculous, and I directed that fifteen drops of cod-liver oil be given three times a day. At 6 p. m. on the 12th the temperature had gone down to 100.7°, at 6 a. m. on the 13th it was 103°, at 9 p. m. on the 13th it was 100°, on the 14th, at 6 a. m., it was 102°, at 3 p. m., same date, it was 101.2° —thus showing a pretty regular morning rise and evening decline of temperature, at a lower range each succeeding day, the wound meanwhile being healthy, and general conditions fair. The appetite, both for the mother's milk and for pap, was remarkably good.

At this point the mother determined to take the child home, as she said she could not spare time to come to the hospital and nurse it, and she contended that it must have the breast besides its other food. She also said her doctor could attend to the ear at home. I vainly endeavored to persuade the woman to allow her child to remain in the hospital two or three days longer, and did not see it again for several days. When she brought it to the outdoor department it still coughed, and appeared thinner and weaker. The wound was not in good condition, and there were strabismus and semicoma. I dressed the wound, and gave iodide and bromide of potassium. I have not seen the patient since. Possibly the family physician was so fortunate as to rescue it from its perilous condition.

Case IV. *Chronic Purulent Otitis Media; Suppurative Mastoiditis.*—Walter K., aged thirteen years, applied at outdoor department, April 18, 1896. Has had a chronic discharge from the left ear for a year. Severe pain began two days ago in the mastoid region, accompanied by marked swelling and extreme tenderness; temperature, 102°. On cleansing the ear a sequestrum of bone was found occupying the external auditory canal, near its orifice; this I removed with a forceps. One side was found fairly smooth and irregularly convex, and had constituted the inner bony wall posteriorly. On the opposite side the cancellous bone structure was very irregular, and the sequestrum showed signs of extensive caries and pus infiltration. The drum membrane had an old perforation, and there was a thick purulent discharge.

Operation, April 23d, afternoon.—Pus was found beneath the skin; the antrum was full of pus and granulations. Mastoid bone extensively necrosed. All necrosed portions were removed with chisel and mallet, curette, and forceps, and the wound dressed in the usual manner.

April 24th, 3 P. M.—Patient slept well; complains of little pain; wound in a healthy condition; very little discharge; temperature, 101°.

April 25th, 6 A. M.—Temperature normal. On the 26th, 101°, and subsequently ranged from normal to a degree above. Recovery.

129 East Fifty-ninth Street.

ON THE EFFICACY OF NON-OPERATIVE TREATMENT IN CERTAIN VARIETIES OF REFRACTIVE* STRABISMUS.

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In the following pages it will be my endeavor to present briefly the histories of a few cases which I have carefully selected from a number as best illustrating the theme of this essay.

The first case is certainly unique in many respects:

Case I.—October, 1892. William M., a baby, aged fifteen months, had a pronounced convergent squint, eight millimetres of the right eye. Ophthalmoscopically, I observed a hyperopia of 5.5 D. in the R. E. and 0.5 D. L. E. R.+0.5 D. and L.+4.5 D. were ordered for constant use. The child wears them as directed, and although the spectacles, naturally specially constructed, appeared to annoy him greatly at first, this gradually wore off. It was noted with gratification that within four weeks of wearing the glasses the eyes assumed a normal position. At different times larger-sized lenses have been ordered, but the strength has remained unchanged.

The child at the time of writing this history is nearly six years of age, and both easily and correctly distinguishes objects of varying size with either eye, at distances which indicate the maintenance of excellent visual acuity.

Case II.—November 19, 1894. Annie W., aged eleven years; the left eye squinted continually inward to a distance of six millimetres. It had been operated upon six weeks before by a colleague who did not order glasses to be worn subsequently; whatever temporary ameliorative change may have occurred did not last long, as the eye soon returned to its former convergent position. Examination with the ophthalmoscope revealed an ametropia of + 4 D. in the R. E. and + 4.5 D. in the other. The ophthalmometer indicated R. and L. 0.5 D. 90° w. r. I prescribed R. + 3.75 D. s. and L. + 4.25 D. s.—specially ground for constant use.

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* A generic term which I employ as being more accurate and descriptive than concomitant.

Within a few minutes of wearing the trial frame containing these glasses the strabismus had practially disappeared. The patient was last seen by me on March 14, 1896, and it was noted that the glasses had completely corrected the squint. The sight is R. V. $\frac{20}{30}$ with glasses, and in the L. E. $\frac{20}{40}$, also with correction, showing the existence of *amblyopia ex anopsia.*

Case III.—Violet S., aged ten years, periodic squint of the left eye. The vision in both eyes is defective, $\frac{20}{70}$, with a $+ 2\frac{1}{2}$ D. O. D. or O. S. is increased to $\frac{20}{40}$; no further improvement possible; the constant use of the glasses has caused the occasional strabismus to disappear. Javal, oph. R. and L. 0.5 D. 90° w. r.

Case IV.—Alice G., aged seven years, constant convergent squint of the R. E., six millimetres.

I am informed by the child's mother that an operation (tenotomy) had been performed, but that the eye remained *in statu quo ante.* Apparently neither muscle nor tendon had been divided. With the ophthalmoscope I observed R. + 6 D. and L. + 5 D. In accordance with my practice in the higher forms of hyperopia, I deducted 0.5 D., ordering therefore R. + 5.5 D. and L. + 4.5 D., which in a few weeks completely corrected the deviation. The vision of the R. E. is not more than $\frac{20}{50}$ with correction, while the left is $\frac{20}{30}$; quite a difference considering the similarity of the refractive error. Ophthalmometrically, R. and L. 0.5 D. 90° w. r.

Case V.—Albert A. S., besides having a chalazion of the right upper lid, which I removed, has an almost constant divergent squint of two millimetres of the right eye, the sight of which is but $\frac{20}{70}$. Although glasses have at various times been prescribed for him by ophthalmologists, he complains that while some of the glasses were too strong and others too weak, the squint still remained, and his vision did not seem to be materially improved. In fact, he told me that he had cataract, which, let us hope, was an assumption for which he alone must be held responsible, since none exists. After careful testing, I succeeded in raising the vision of that eye to $\frac{20}{20}$ with $+ 2\frac{1}{2}$ D. s. $\smile$ + 1.75 D., c. ax. 120°. The visual acuity of the left eye is $\frac{20}{15}$ — without glasses, and $\frac{20}{15}$ with + 0.25 D., c. ax. 180°. In both eyes the findings of the ophthalmometer are verified, the axes agreeing exactly, and the cylinder in each case being the normal 0.5 D. less than the instrument's indication. He now has excellent vision, as is manifest, uses both eyes for clerical work without annoyance or fatigue, and the squint belongs to ancient history.

This case is interesting and singular, not only on account of the strabismus having been cured by glasses alone—which is rather unusual when there is a divergence, and of hyperopic origin at that—but also because the vision has been brought up to an emmetropic standard in an eye which, through its deviation and ammetropia, had previously proved but of little service to him.

Case VI.—Louis S., aged twenty years, periodic divergent squint, two millimetres of the right eye; complains of headache and recurring hordeola. He has compound myopic astigmatism with crossed axes, and in the R. E. the myopia (2.5 D.) is twice that of the left. Wears the glasses (sphero-cylinders) prescribed constantly, and has ceased to squint.

Case VII.—The Rev. G., aged forty-five years, pronouncedly myopic (4 D.); has a convergent squint three millimetres of the left eye. There is an astigmatism of — 3 D. in the L. E., oblique axis (135°), and 1 D. in the other, also 135°, which error had not previously been corrected. Since wearing the proper glasses, relieving the astigmatism and myopia, the squint has disappeared.

Case VIII.—Mrs. A., aged sixty-five years, constant convergent squint, five millimetres, increased when fixedly regarding an object; high myopia (10 D.), staphyloma posticum. Had heretofore been using for reading and distance — 5 D. s., which does not relieve the squint. The ophthalmometer indicates in her case R. 3 D. 45°—135° w. r., L. 1 D. 90°—180° ag. r. By the functional test she accepts R. $- 8\frac{1}{2}$ D. $\smile$ — 2.5 D., c. ax. 135°, and L. $- 8\frac{1}{2}$ D. $\smile$ — 1.5 D., ax. 90°, and for reading I deducted — 3 D. s.

It is generally assumed that in such cases of high myopia the squint is due to impeded locomotion on account of the length of the eye; but inasmuch as the deviation disappeared when the ciliary strain was relieved it can not apply to this case.

What conclusions may we draw from the foregoing cases? Whenever a refractive squint is observed in infancy or childhood, it is necessary, absolutely so, to primarily correct the ametropia; the same applies to adults in minor forms. After a fair trial has been given to glasses a tenotomy may still be required, but it should be deemed a last resort and not the first. In adults, however, a well-marked convergent squint, constant in character and of old standing (due, as a rule, to hyperopia), generally requires a tenotomy, and glasses alone do not frequently effect a cure. This applies with even greater emphasis to divergent squint when of myopic origin. This latter form is without doubt the most difficult to cure, and often necessitates not alone the division of one or both of the external recti, but often the advancement of the internal rectus of the squinting eye.

From the cases described it will be seen that although many were amblyopic the deviations were nevertheless corrected, demonstrating that an emmetropic standard is not absolutely essential for the relief of a squint.

Glasses once worn, either to take the place of an operation or to follow it, will be necessary for the major part of one's existence, and here I desire to record the following observations: It has been my privilege to observe that those hyperopes in whom the pupils are naturally large and the anterior chambers rather deep suffer more from the optical error than those in whom the converse conditions prevail. In these eyes the ciliary muscles are not well developed, and in the accommodative effort the strain becomes so marked that asthenopia is the result. These patients are prone to have convergent squint from the associated extreme effort on the part of the internal rectus.

The more sensitive the retina, which does not necessarily mean the younger the patient, the more readily and rapidly is the beneficial effect of the glasses experienced. This train of thought leads me to make the assertion that, although doubted by some, it is nevertheless true that *amblyopia ex anopsia* does exist. How any experienced observer can doubt this I fail to understand.

To fully or almost entirely correct the ametropia of a squinting eye and prescribe a weak lens for the other, there being but a slight difference in the relative optical error, would be unreasonable, since these refractive squints are concomitant, one eye influencing the other. Each organ must be considered and examined separately, and as carefully corrected as in astigmatism or any other asthenopia-producing variety of ocular malcurvature.

It must be understood that a tenotomy does not *per se* cure a refractive strabismus; it merely effects a temporary restoration of equilibrium. If glasses are now prescribed, this state will be maintained by their aid as long as they are worn—until the dusk of life. Then waning accommodation, by relieving the extrinsic muscles of the onus of participation in the ciliary effort, may render their further use unnecessary.

Some clinicians correct the total hyperopia in strabismus. I do not consider it good policy, however. The deduction of 0.5 D. in the higher and 0.25 D. in the lower forms is regularly productive of the best results. Although the dioptric apparatus is based upon mathematical laws, it is nevertheless variable on account of the compensatory character of the crystalline lens and the lid pressure on the cornea. Therefore the formulation of any stereotyped rule, applicable in all cases, would certainly fail in its intention, and the results obtained would disprove its accuracy.

In regard to the correction of an optical error, be it for the relief of asthenopia or for the cure of squint in hyperopia, myopia, or astigmatism, it will be well to remember that an under-correction is at all times preferable to the converse. An over-correction reverses the optical error with all its evil consequences, and, paradoxical though it may seem, a full correction in the first instance frequently does the same. Understanding as we do the phenomena of accommodation, the reason is self-evident. By not forcing a strong lens one will always keep on the safe side: it is by all means better, if need be, to subsequently increase the strength of a glass than to diminish it.

In some future disquisition I shall consider the subject of strabismus *in extenso*.

The Seminole, 202 Western Boulevard.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Pathology, on Tuesday evening, the 18th inst., Professor Burt Green Wilder, of Cornell University, was to read a paper entitled The Brain of a Suicide, with Fissural Peculiarities. Specimens were to be exhibited by Dr. G. W. Wende and Dr. A. L. Benedict.

The Insane Asylum, Jackson, Louisiana.—Dr. J. W. Lea has been appointed assistant superintendent.

ADENOIDS IN THE NASOPHARYNX.

A PLEA FOR THEIR MORE GENERAL RECOGNITION.*

By F. A. BOTTOME, M. D.

In the nasopharyngeal vault, out of sight except with the aid of the nasopharyngeal mirror, there exists in many children, and in adults less frequently, a mass of tissue known as adenoids, adenoid vegetations, hypertrophy of the pharyngeal tonsil, or third tonsil.

This mass consists of a true hypertrophy of the normal lymphoid structure found in the pharyngeal vault. In size it varies from a slight thickening of the upper wall and upper portion of the posterior wall to a mass which completely fills the nasopharynx.

The history, ætiology, and minute pathology of this foreign body I need not dwell upon. The symptoms and diagnosis, however, I do want to emphasize, because they are not so well understood by the practitioner, or, if so, are often overlooked unless this condition is associated with that of hypertrophied tonsils, which is easily diagnosticated, and, when found, usually suggests the probable presence of adenoids. It is true that the two conditions are frequently associated, but it is also true that adenoids exist when the tonsils are not enlarged, or they are not removed when the hypertrophied tonsils are excised, the surgeon feeling that in the removal of the tonsils he has removed all obstructions.

If the surgeon were permitted to remove only one of these conditions, the choice should be given to the removal of the adenoids, because of the more marked effect which these have upon nasal respiration. And indeed some observers state that the removal of the adenoids alone has a decided effect in bringing about a diminution in the size of the hypertrophied tonsils.

Such a limitation, however, is rarely placed upon the surgeon, so that there is no excuse for leaving the operation incomplete and not removing both tonsils and adenoids at the same time when an anæsthetic is used, or at separate sittings when an anæsthetic is not used.

Symptoms.—It will help us materially in understanding the symptoms dependent upon this condition if we bear in mind the anatomical position which this growth occupies.

The nasopharynx, though comparatively small, is an important cavity because of its relation to the nose and the ears, through the Eustachian tubes.

It forms part of the respiratory tract, by which air passing through the nose continues down to the alveoli of the lungs. It must, therefore, be apparent that an obstruction in the respiratory tract at this point will eliminate the nasal cavities as a portion of this tract and substitute for them the mouth.

But these nasal cavities have a vital function in the economy of respiration—they cleanse, moisten, and warm the inspired air.

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* Read before the Harlem Medical Association, January 6, 1897.

Regarding this growth, then, as a foreign body situated in this portion of the respiratory tract, it becomes evident that certain symptoms are apt to result.

Thus, in the infant at the breast, feeding is difficult, if not impossible, because nasal breathing being impossible the child can not suckle and breathe at the same time, and malnutrition must result. This is not an uncommon condition, though the true cause is often overlooked for some time and ascribed to tender gums, a rough nipple, or wind colic.

In other cases the growth may not obliterate entirely nasal respiration, but is of sufficient size to make mouth breathing easier, and, as respiration is an involuntary act, the substitution of the mouth for the nose in respiration will be involuntary. In these cases the physiological functions of the nasal mucous membrane are eliminated in the function of respiration.

It may be claimed that the mouth is able to, and does warm, moisten, and filter the inspired air; but consider for a moment the delicate mechanism of the turbinated bodies and compare these bodies with the mouth, tonsils, and pharynx. Evidently, if Nature deemed these last sufficient for the purpose, she would hardly have devised so delicate an organ as the nose and devoted the larger portion to this physiological function and the smaller part to that of olfaction.

That the mouth and throat do supply moisture to the air when inspired through the mouth, and also that this is not physiological, is proved by the fact that mouth breathers are troubled with dry throats, a condition which gives rise to restlessness during sleep, often wakefulness, and, as a result of these, headache and general irritability during the day.

In addition to this, children in whom this condition exists are more susceptible to croup, laryngitis, bronchitis, and pneumonia, and the reason is self-evident, for Nature has placed the nose as the door through which the inspired air shall pass to the lungs, and where the air shall be properly prepared before entering the lungs—just as she has placed the liver in such a position that all food absorbed from the stomach and intestine must pass through it and be acted upon in such a way that the deleterious substances are separated and thrown back into the intestine and expelled from the body.

This differentiation of tissue on the part of Nature is not to be interfered with with impunity, and the presence of this mass of adenoid tissue in the nasopharynx, by interfering with the respiratory function of the nose, is responsible for more trouble than we are accustomed to remember.

It may be suggested that these symptoms above enumerated are not dependent alone upon the presence of adenoids in the nasopharynx, but that any obstruction in the nasal cavities themselves, such as hypertrophic rhinitis, polypoid degeneration, or deviation of the sæptum, may, by interfering with the nasal respiration, produce the same symptoms.

This is quite true; but pathological conditions within the nasal cavity are much less frequent in early childhood than adenoid hypertrophy, and when present in any case are more frequently and readily diagnosticated by the physician.

Aside from its effect upon respiration, with the evils resulting therefrom, this growth acts in its capacity as a foreign body upon the function of hearing.

The principal function of the Eustachian tubes is to supply air to the middle ear, thus equalizing the atmospheric pressure on the outer and inner sides of the drumhead.

At first thought it might appear that in order to interfere with this function of the Eustachian tube it would be necessary that the adenoid growth in the nasopharynx should be large enough to press directly upon the mouths of these tubes, thus blocking them.

Such direct pressure, however, rarely occurs, and yet the function of the tube is frequently interfered with to such an extent that contraction of the drumhead results, with deafness more or less marked.

The explanation, however, is a simple one, if it is borne in mind that the atmospheric pressure of fifteen pounds to the square inch is constant on the outer side of the drumhead, whereas the amount of pressure in the middle ear will depend upon the atmospheric pressure in the nasopharynx.

Therefore, if this nasopharyngeal cavity is blocked up by the presence of adenoids and the nasal respiration thereby interfered with, the air in this cavity is liable to rarefaction—that is, a diminution of the atmospheric pressure.

Even though this diminution is slight, the pressure on the outer side of the drumhead of fifteen pounds is constant, and the result must be a forcing in of the drumhead or contraction.

This condition will cause deafness to a certain extent, and the deafness will increase as the further steps in the pathological process develop—ankylosis of the ossicles and atrophy of the tympanic membrane.

In addition to this, however, a true suppurative otitis media may occur as a result of the presence of this adenoid mass, the explanation of which varies according to different observers. Fränkel, Woakes, and others attribute it to a direct extension of the catarrhal condition so frequently associated with adenoids, a symptom we will speak of later. Blake advocates the theory that the first stage of the inflammation, hyperæmia, is set up in the middle ear by interference with the return circulation, owing to pressure exercised by the adenoid mass upon the pharyngeal veins and those of the deep-seated tissues.

Bosworth gives the more reasonable explanation in the fact that the rarefaction in the middle ear leads to hyperæmia of its mucous membrane with hypersecretion, and as this occurs in a closed cavity the catarrhal inflammation is converted into a suppurative one—a change which occurs in all mucous-lined cavities of the body.

Whatever the explanation may be, the fact of the occurrence of inflammation of the middle ear as a result of the presence of adenoid hypertrophy in the nasopharynx is not disputed, and it is interesting to note the frequency of occurrence of this complication as given by different observers. Woakes states that not more than five per cent. of his patients with adenoids escaped ear complications.

Urbantschitsch found hearing affected in a hundred and thirty out of a hundred and seventy-five cases.

In Meyer's one hundred and two cases, seventy-two patients suffered from aural disease, while Swinburne found ear complications in twenty-seven out of forty-two cases.

If this cause of inflammation of the middle ear was more generally recognized we would not see so frequently those cases of recurring otitis media. A child complains of earache; the physician prescribes a warm ear douche or instillation of laudanum. The process may stop here, but more frequently a discharge follows, for which a boric-acid wash is ordered. After a longer or shorter time this discharge ceases, only to recur again whenever the nasopharynx, blocked up with this adenoid mass, becomes congested. The antiseptic ear douche is all right so far as it goes, but the cause of the trouble is in the nasopharynx. Why, then, not remove the cause, and so prevent the recurrence of the attack?

The discharge of muco-pus, of which we have spoken, is an important symptom. This secretion is poured out from the hypertrophied glands and passes down the posterior wall of the pharynx, giving rise to a distressing cough, especially marked at night, when the patient is in the recumbent position.

When occurring in children who have not learned the art of expectoration, this secretion is swallowed and tends to derange the stomach digestion, which tendency is only aggravated by the syrupy cough mixtures frequently given in the mistaken diagnosis that the cough is due to a mild bronchitis.

On the quality of the voice this condition of adenoid hypertrophy has a marked effect, and is frequently diagnostic of the condition.

In speaking, the voice has a peculiar quality of thickness or deadness, similar to that occurring in an ordinary cold in the head. The *m*, *r*, and *n* are imperfectly enunciated.

In adults, especially when the growth is not large, this quality may be absent, but in public speakers there will be a tendency to rapid tiring of the voice, and at no time will there be that clear, ringing quality which the voice should possess.

The effect upon the singing voice is even more marked and important, for, while the larynx is responsible for the pitch and quantity or loudness, the nasopharynx and nasal chambers are responsible for the timbre—*i. e.*, quality or resonance; and it must therefore be evident that the presence of this mass in the nasopharynx will affect more or less the quality of the voice.

Another condition for which this growth may be and often is responsible is a malformation of the dental arch resulting from the substitution of mouth for nasal breathing. Dentists are beginning to recognize this fact, but, unfortunately, the damage is accomplished before the patient comes under their observation, whereas if the causes of this malformation were recognized and removed by the surgeon the malformation would not develop.

Before leaving the symptomatology of adenoid hypertrophy a brief mention must be made of certain reflex symptoms caused by this condition.

Asthma may be excited reflexly by the presence of adenoids, just as it may be excited reflexly by obstruction in the nasal cavities.

Stammering and other speech defects may be due to this condition, as has been so well proved by Makuen, of Philadelphia.

Incontinence of urine, so frequently present in children, is a symptom associated with or caused by many different pathological conditions. Not infrequently it is a reflex symptom depending upon a condition situated some distance from the bladder.

That adenoids in the nasopharynx should be suggested as a possible cause of incontinence will not seem strange if we remember the difficulty frequently encountered in curing these cases, the symptom persisting after we have seemingly removed all possible causes.

Incontinence has been observed to disappear after the removal of these adenoids, and the writer has the history of one case in which the operation was performed with this end chiefly in view, and with the gratifying result of a complete cessation of this troublesome symptom.

Diagnosis.—The diagnosis of adenoid hypertrophy is readily made when one suspects that this condition exists; but it is a lack of this suspicion on our part which is responsible for the damage resulting from allowing this growth to remain.

If any one of the symptoms above mentioned manifests itself in an infant or child under our care, we should not delay examining to satisfy ourselves whether adenoids are present.

In many cases when the growth is large the patient bears the diagnosis plainly written upon his face. The stupid expression, parted lips, thickened or flattened nose, are thoroughly characteristic.

The voice is thick and muffled from the absence of nasal quality, and there is the inability to enunciate the *m*, *n*, and *r*.

But we should not wait for these pronounced symptoms to develop.

Every child under our care should be examined for this condition as a routine practice, and in this way the trouble can often be detected in the early stages and means instituted to prevent further development.

In determining the existence of this growth two methods are at our disposal: In older children we can see the growth by the aid of the nasopharyngeal mirror, and in younger children we can feel it by introducing the finger behind the soft palate into the nasopharyngeal cavity.

In employing the latter method the child can be held on the operator's lap with its head pressed against the chest, or in older children the child can stand and the examiner press its head firmly against his side.

To protect the examining finger from being bitten finger stalls have been devised, but a simpler method is to press the child's right cheek between its upper and lower teeth with the right index finger, while the left index finger is rapidly passed behind the soft palate into the nasopharyngeal cavity.

When the tip of the examining finger reaches the pharyngeal vault it will feel the soft, boggy adenoid growth, if present, instead of the normal smooth, hard surface of the roof of the pharynx.

It is important to keep in the median line, otherwise the finger may come in contact with one or the other mouths of the Eustachian tubes, which, being prominent, may lead one to mistake them for adenoid hypertrophy. This can be avoided if the finger is made first to impinge upon the hard, sharp edge of the vomer, and, using this as a guide, passed upward and backward over the vault.

On withdrawal the finger may be tinged with blood, which is confirmatory proof of its presence, as this adenoid tissue bleeds on slightest irritation.

Treatment.—If the cause of this condition of adenoid hypertrophy was definitely understood the first duty of the physician would be to remove the cause, but it has not been satisfactorily explained why these glands in the nasopharynx, as well as those at the base of the tongue and the tonsils, should become hypertrophied in some and not in others. To say that it is a manifestation of a scrofulous condition is only begging the question and cloaking our ignorance.

It is reasonable, however, to suppose that the frequent engorgement of the normal glandular tissue in this region, which occurs in the process commonly known as catching cold, may result in a final hypertrophy of this tissue, and that, therefore, a proper hygiene, which comprises bathing, suitable clothing, especially the avoidance of overclothing, and pure air, of a temperature not over 70°, in the living and sleeping rooms, must be regarded as at least one means of prophylaxis.

When the hypertrophy has taken place, and we find, on examination, a mass of tissue in the pharyngeal vault, the question of treatment becomes imperative.

To allow this foreign body to remain in the nasopharynx, in the hope that it will atrophy at puberty or later, is a procedure which can not be too strongly condemned.

Granted that such atrophy of the adenoid mass does take place and the nasopharynx returns to the normal, such a result can not be expected in the case of the ear which has been the seat of a long suppurative process or of frequently recurring attacks of suppuration.

Moreover, we know that cases of deafness which are due to a simple retraction of the drumhead, and to cure which the adenoids have been removed, require a long course of treatment, principally that of inflation of the middle ear, before hearing can be restored to the normal, and alas! in too many cases even this treatment avails but little, because of the delay in removing the adenoids.

It can not be too strongly emphasized that this adenoid hypertrophy in the nasopharyngeal vault is a constant menace and should be removed as soon as detected.

In its removal, drugs, such as the syr. ferri iodidi, cod-liver oil, etc., which are frequently prescribed internally, are of no direct value. Applications to the growth itself of astringents are of questionable value, certainly not so at all when the growth is large, and the application of caustics is unsafe, because of the difficulty of limiting their action.

The removal by operation is practically devoid of danger, at least in experienced hands, the only possible contraindication being that of a history of hæmophilia.

The choice of instruments, whether forceps, curette, snare, or finger nail, also the question of the use of general anæsthetics, are matters of preference on the part of individual operators.

In closing, allow me again to emphasize the fact that this adenoid hypertrophy in the nasopharynx, acting in its capacity as a foreign body, may be and frequently is responsible for very serious conditions, especially those pertaining to the ears; that its early recognition by the family physician is important, and, finally, that when present its removal without delay is imperative.

218 Lenox Avenue.

A CASE OF CHRONIC ANÆMIA.

TREATMENT BY NUCLEO-ALBUMINS AND BONE MARROW.

By GEORGE H. COBB, M. D.

M. F., a woman, aged twenty-five years, unmarried, came under observation for the first time in January, 1894. The family history was negative. Father and four brothers are living; mother died of pneumonia. The personal history was as follows: The usual illnesses of childhood were safely passed, and the patient, at about eleven, came under a physician's care for anæmia. Benefit followed the treatment, but a cure of the condition was never reached. School life continued up to the nineteenth year, and during the three closing years there was slight emaciation; dry and parchment condition of skin; loss of muscular tone; frequent epistaxis; hæmorrhage from gums; four attacks of purpura; vertical headache; variable appetite; occasional attacks of diarrhœa without known cause, and nervous exhaustion.

Under treatment these symptoms were temporarily relieved, but returned, especially during the winter months.

Coming under observation at the New York Hospital with the symptoms as recorded above, a blood count gave 3,000,000 red and 6,000 white cells, hæmoglobin percentage (Fleischl) 54. The first attempt was made to correct errors of digestion, with good results. The subsequent use of tonics singly and in combination, iron, arsenic, cinchona, peptomanganate of iron, ferratin, proved of only temporary advantage. The limit of improvement was sixty per cent. hæmoglobin and 3,500,000 red blood cells. There the case came to a standstill. Later, and for a considerable period, gradual improvement followed the use of—

℞ Creosoti.......................... ♏v;
Ext. malti c. ol. morrh................. ℥ ss.
M. S.: ℥ ss. t. i. d. p. c.

The much-desired change of residence, rest, and out-of-door life was quite impossible, and the patient became discouraged. About this time my attention was called to hæmaboloids, a nucleo-albumin and bone-marrow preparation, which gave promise of favorable results from use. A trial was made. The Zeiss and Fleischl instruments were used for observation, the color test of the latter being verified by three observers. The results are as follows:

Examination.—March 10th: Weight, 118 pounds; red cells, 2,780,000; hæmoglobin, fifty-two per cent. March 24th: Weight, 120 pounds; red cells, 3,350,000; hæmoglobin, seventy-four per cent. April 7th: Weight, 122 pounds; red cells, 4,200,000; hæmoglobin, eighty-six per cent. April 21st: Weight, 125 pounds; red cells, 4,500,000; hæmoglobin, one hundred per cent.

There has been a marked improvement in the appetite and general well-being. Rest is more refreshing, digestion normal. Specific gravity of urine has risen from 1.010 to 1.018. Headache and neuralgia have disappeared, and menstruation was more copious, also less painful. During the test no other medication was used.

Therapeutical Notes.

An Application for Suppurating Wounds.—The *Journal de médecine de Paris* for May 2d attributes the following formula to Schwartz:

℞ Iodoform,
Salol,
Bismuth subnitrate,
Charcoal,
Cinchona,
Benzoin, } .... equal parts.
M.

The Treatment of Threadworms.—According to the *Journal de médecine de Paris* for May 2d, Comby advises the following method:

℞ Santonin...................... $\frac{3}{4}$ of a grain;
Calomel...................... $1\frac{1}{4}$ grain.

M. One such cachet to be taken before breakfast every day for three days; also, every evening for the same number of days, a little of this ointment to be inserted within the anus:

℞ Glycerite of starch.................. 2 parts;
Mercurial ointment................ 1 part.
M.

THE
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THE ETHICS AND ECONOMICS OF PROPRIETARY PREPARATIONS.

Dr. Charles Rice, a member of the committee of revision of the United States *Pharmacopœia* and the chemist of the New York department of public charities, has lately thrown a good deal of the light of common sense on the question of the advisability of using proprietary preparations. What he says is in the form of a report to the committee on the apothecary's department of the medical board of Bellevue Hospital, made in compliance with a request from that body. The report was adopted by the medical board on April 1st, and has been approved by the board of commissioners.

Dr. Rice defines a proprietary article as one of which some person or persons have exclusive control of the production, sale, or use—of all three of these features in some cases, of one or two of them only in others. He divides such articles into natural and artificial products, and again into these three classes: 1. Products of nature prepared under patents and mostly sold under copyrighted names. 2. Products of nature that have never been made under patents or are no longer so made, but are sold under copyrighted names. 3. Artificial preparations sold under copyrighted names. As regards patented articles, it is a principle in patent law, says Dr. Rice, that a product of nature can not be patented; hence no patent is granted on any chemical substance of a definite and constant composition, even though it may, at the time when the patent is applied for, not yet have been found occurring ready-formed in nature. But any process, not previously known or used, by which such a product can be formed is patentable. Certain articles that are made by patented processes may also be made by processes that are not patented, and, as it is impossible for the purchaser to distinguish by which process they have been made, nobody, says Dr. Rice, would think of raising any objection against their use in medicine. As an example, he mentions salicylic acid, which, in the form of methyl salicylate, exists in oil of wintergreen and some other volatile oils, from which the acid may readily be prepared; but, as these oils would be utterly inadequate to supply the demand, more than ninety-five per cent. of the salicylic acid used in medicine is produced by a process that was patented in 1874, but on which the patent has now expired. A patent, says Dr. Rice, not only does away with all secrecy—which is usually considered the objectionable feature of a proprietary article—but it commonly acts also as a sort of guarantee of the uniformity of the product in composition, strength, and purity.

Dr. Rice thinks that if all these points are taken into consideration, it will probably be conceded that, if an article is protected by a patent alone—the feature of a copyrighted name being disregarded—it becomes practically impossible to separate patented substances into classes of which one may and the other may not be used without a violation of ethics, and therefore none of these articles should be rejected for the reason alone that they are patented. He then proceeds to consider the three classes of proprietary articles previously mentioned.

As to products of the first class, inasmuch as copyrights on names never expire, whereas a patent has a definite term of years to run, it is evident, says Dr. Rice, that the proprietors of the copyrights would have a perpetual monopoly unless, after the expiration of the patents, other producers should put the same articles on the market under new names not copyrighted. All these bodies—such as antipyrine, aristol, phenacetine, salol, salophene, sulphonal, trional, and vanillin (the last-named substance being now sold only under its proper chemical name)—will undoubtedly, Dr. Rice thinks, be rescued from their present monopolistic control when the patents on them have expired. There is no secret whatever about them, he says. They are definite chemicals of known composition and properties, and, since some of them have been found to have real therapeutical value, no objection, it is believed, will be raised against the whole class.

Dr. Rice next considers the products of nature which have never been or are not now made under patents, but are sold under copyrighted names, familiar examples of which are antifebrine (acetanilide), dermatol (bismuth subgallate), formalin, or formol (formaldehyde), pyrozone (hydrogen-dioxide solution), diuretin (sodium-theobromine salicylate), and lanolin (hydrous wool fat). The owner of the copyrighted name, he remarks, usually professes that his product is "purer" or "more refined" than the article found on the market under the common name, and this pretension, he says, is true in some instances, particularly in those of articles first put on the market under copyrighted names, although at present the best grades of the several articles sold under their common names appear to answer every purpose. These products, he thinks, are unobjectionable, but he says it seems preferable, as it is certainly more economical, to order them under their common names, especially acetanilide, bismuth subgallate, and formaldehyde.

His third class, preparations that are not products of nature, sold under copyrighted names, Dr. Rice divides into three groups. The first group, which he considers unobjectionable, comprises preparations the origin and composition of which are not kept secret, such as ichthyol, creolin, Mellin's food, malted milk, etc. The second group, which he thinks to be of doubtful value, includes all the preparations of the class that do not belong to either the first or the third group, which last, by far the largest, consists of the "secret nostrums," such as "soothing syrups," "female regulators," "blood-purifiers," etc.

Incidentally, Dr. Rice justly complains that for years the name of Bellevue Hospital has been taken in vain by a number of persons and firms without any authority whatever. It is a common occurrence, he says, for samples of proprietary medicines, foods, mineral waters, plasters, etc., to be sent to the hospital or to members of the house staff for "trial," whereupon the subsequent advertisements of the articles in question often assert that the latter are "used in Bellevue Hospital," leaving the impression upon the mind of the reader that the article or articles have been used with the sanction of some member of the medical board. It is probably impossible, says Dr. Rice, to find a remedy for this evil, from which many other institutions of repute likewise suffer. To publish a denial of such false assertions, he thinks, would only aggravate the evil. The utmost that can be done appears to be to caution the medical staff against any entanglements with the agents of the interested parties or encouragement of them.

A GIGANTIC LITERARY AGENCY.

This title must certainly be given to the Institut de bibliographie scientifique, of Paris, for its scope covers not only bibliography, but also various sorts of work connected with the editing and publishing of scientific journals, the organization of learned societies and national and international expositions and congresses, the furnishing of photographs and other pictorial appliances for teaching and demonstration, and the supplying of many other articles, down to gummed lists of periodicals. The chief feature of its work, however, is similar to that done in Washington on the *Index-Catalogue of the Library of the Surgeon-General* and the *Index Medicus*. The institute issues a quarterly bulletin, of which the energetic Dr. Marcel Baudouin is the editor, and on his shoulders, indeed, the direction of the institute's work seems to fall almost entirely, as he has been its founder and organizer.

Dr. Baudouin has been very much impressed with the importance of Dr. Billings's bibliographical labors, and has sought to improve upon them. Instead of issuing printed volumes, he keeps a card index, arranged according to the Dewey system of classification, amplified by himself, and, on request from a subscriber, hunts up the titles wanted and lends or sells the memoranda, as may be required. Dr. Baudouin maintains that it is much easier to find what one wants in such an index than by hunting through a number of volumes, and that the ruinous cost of publication is avoided. No doubt this is true, but, on the other hand, a great deal of time in the aggregate must be lost in consulting the index by mail. It may readily be conceded, however, that its existence is of great advantage.

Dr. Baudouin asks for aid from all parts of the world in carrying out his great undertaking, and we think he is entitled to receive it liberally. All he asks for is that a copy of every scientific book and periodical be sent to the institute to be indexed. That is little enough for authors and editors to do to further the proper execution of so great a task as that to which Dr. Baudouin is devoting himself, and we hope he will meet with the hearty co-operation of members of the medical profession.

THE HYGIENE OF THE BARBER'S SHOP.

Dr. Heinrich Berger, of Neustadt, has written a book on this subject in which he lays down the following requirements: 1. The barber should be free from epilepsy and other spasmodic affections, also from drunkenness and from contagious disease. 2. Persons affected with contagious diseases of the skin, the hair, the beard, or the genitals should not be served in public barbers' shops, but at their own homes and with their own appliances. 3. It would be best for everybody to be served only with his own implements. 4. Only good hair-brushes that are regularly cleaned should be employed, and the combs should be of good horn, rubber, or tortoise-shell. 5. Instead of powder-puffs, little pledgets of wadding should be used and then thrown away. 6. The towels, gowns, and napkins should always be clean and recently washed; instead of linen napkins, paper is to be preferred, as it may be thrown away after being used. 7. After combs have been used they should be cleansed mechanically and disinfected with corrosive sublimate; shears, razors, and shaving-brushes should be boiled after they have been used, or wiped with wadding moistened with absolute alcohol. 8. The practice of breathing on the razor-strap and then wiping it off with the hand should be prohibited. 9. The head should be cleansed often, scratching being avoided; the use of the revolving head-rest is objectionable. 10. The barber's hands should always be perfectly clean; his attire should be light and fit close at the neck and wrists. 11. The blowing aside of hair as it is cut should be forbidden. 12. Barbers and the public should be instructed concerning contagious diseases, especially those of the skin, the hair, the beard, and the genitals. 13. A placard with these rules printed on it should be displayed in every barber's shop. 14. Hair-dressing establishments should be subject to license and frequent inspection.

Dr. Karl Ries, of Stuttgart, reviews the book in the *Monatshefte für praktische Dermatologie* for May 1st, and it is from his review that we have taken the author's rules. As regards the propagation of contagious diseases in barber's shops, Dr. Ries states that his own observation is to the effect that the barber's hands are by far the commonest vehicle of the contagion, and he adds that, in spite of all hygienic regulations, the danger of infection will not be diminished unless the hair-dressers will submit to cleansing of their hands in the medical sense after each exercise of their art. The subject is certainly worthy of more attention at the hands of the medical profession and sanitary officials than it has hitherto received.

MINOR PARAGRAPHS.

RECOVERY FROM A WOUND OF THE SUBCLAVIAN ARTERY.

Dr. P. Ziegler (*Annalen der städtischen allgemeinen Krankenhäuser zu München*, 1896; *Centralblatt für Chirurgie*, May 1, 1897) contributes to the casuistics of wounds of the subclavian artery an account of the case of a young man who, having received a number of stab-wounds, was taken unconscious to a surgical clinic. He was found to be profoundly anæmic, no pulse was anywhere to be felt, and the pupils were widely dilated and destitute of reaction. Among his wounds there was one about three quarters of an inch long in the left infraclavicular fossa. None of the wounds were bleeding. The limbs were tightly bandaged and compression of the subclavian artery was practised above the clavicle. The wound was enlarged upward and downward, the pectoral muscles were divided, and a mass of clots was turned out, whereupon there was an issue of arterial blood in a stream. The subclavian artery was roughly laid bare and divided and the two ends were tied with catgut. After the employment of saline infusion and excitants the man regained consciousness. The wound healed well, and in three months he was able to go back to his work, with no circulatory disturbances and with no left radial pulse. In cases of punctured wounds of the subclavian artery the author accords considerable diagnostic importance to tumidity of the infraclavicular fossa, which, he says, does not occur from a wound of a small vessel. The incision should be vertical, to facilitate ready exposure of the vessel and section of the clavicle in case that should be found necessary.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 18, 1897 :

DISEASES.	Week ending May 11.		Week ending May 18.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	1	13	2
Scarlet fever	213	9	201	7
Cerebro-spinal meningitis	3	0	0	0
Measles	360	7	270	14
Diphtheria	293	56	286	33
Croup	12	2	6	1
Tuberculosis	224	102	162	75

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general :

Small-pox—United States.

Brooklyn, N. Y.	May 8–15		1 death.
New York, N. Y.	May 8–15		1 "
Pensacola, Fla.	May 1–8	3 cases of varioloid.	
Memphis, Tenn.	May 8	3 cases.	

Small-pox—Foreign.

Bombay, India	April 6–13		1 death.
Cairo, Egypt	March 25–April 8		3 deaths.
Alexandria, Egypt	March 25–April 8		2 "
Calcutta, India	March 27–April 3		16 "
Genoa, Italy	April 24–May 1	1 case.	
Hong Kong, China	March 27–April 3		9 "
Iquique, Chili	March 20–27		2 "
Madras, India	April 2–9		2 "
Madrid, Spain	April 21–28		1 death.
Messina, Italy	April 24–May 1		1 "
Moscow, Russia	April 10–17	5 cases.	
Nagasaki, Japan	April 11–18	22 "	10 deaths.
Odessa, Russia	April 17–24	4 "	3 "
Osaka and Hiogo, Japan	April 3–17	12 "	6 "
Rio de Janeiro, Brazil	April 3–10	1 case.	
St. Petersburg, Russia	April 17–24	18 cases,	3 "
Trieste, Austria	April 17–24	8 "	1 death.
Warsaw, Russia	April 10–17		3 deaths.
Yokohama, Japan	April 1–22	20 "	5 "
Japan	April 1–22	3,750 "	1,271 "

Cholera.

Bombay, India	April 6–13		1 death.
Calcutta, India	March 27–April 3		118 deaths.

Yellow Fever.

Rio de Janeiro, Brazil	April 3–10	15 cases,	1 death.
Sagua la Grande, Cuba	April 24–May 8	47 "	

Plague.

Formosa, Japan	April 1–22	64 cases,	54 deaths.
Bombay, India	April 6–13	378 "	
Formosa, Japan	April 20–23	47 "	

The Indiana State Medical Society.—The forty-eighth annual meeting was held in Terre Haute, on May 20th and 21st, under the presidency of Dr. J. H. Ford, of Wabash. The programme included the following papers: The Early Treatment of Slight Injuries, by Dr. J. H. Wilson, of Plymouth; Some Disorders of Digestion, by Dr. G. D. Kahlo, of Indianapolis; The Ophthalmoscope as an Aid in General Medical Diagnosis, by Dr. L. D. Brose, of Evansville; Malarial Fever, by Dr. Frances A. Cantrall, of Evansville; A Case of Hæmaturia accompanied with a Parasite, by Dr. Calvin Carter, of Brookville; The Neuroses by Dr. D. D., Miller, of Goshen; Tympany as a Prognostic Indication, by Dr. M. F. Porter, of Fort Wayne; Anæmia, by Dr. George W. Finley, of Harmony; A Case of Wound Infection by the Bacillus Aerogenes Capsulatus, with Amputation and Recovery, by Dr. Charles E. Ferguson, of Indianapolis; A Case of Tuberculosis of the Spleen, with Surgical Treatment, by Dr. A. M. Hayden, of Evansville; Advancing Requirements in Obstetrical Work, by Dr. W. J. Fairfield, of Anderson; Some Emergencies of the Lying-in State, by Dr. F. M. Wells, of Charlestown; The Conditions indicating Operative Interference in Obstetrics, by Dr. Louis Burckhardt, of Indianapolis; The Eye ground in the Parturient Woman, by Dr. K. K. Wheelock, of Fort Wayne; Mastoiditis and Intracranial Complications of Otitic Origin, by Dr. H. Boyd-Snee, of South Bend; Diagnosis by Blood Examination, by Dr. H. Furniss, of Indianapolis; Brain Surgery, by Dr. E. P. Gould, of Royal Center; The Removal of Small Growths by Electrolysis, by Dr. E. P. Easley, of New Albany; The Regeneration of Tissue, by Dr. W. P. Wherry, of Fort Wayne; A Brief Study in Biology, by Dr. James F. Hibberd, of Richmond; Cholera Infantum—its Ætiology and Treatment, by Dr. J. M. Doan, of Clayton; Infant Food and Infant Feeding, by Dr. L. P. Drayer, of Fort Wayne; The Ætiology of Rheumatic Fever, by Dr. T. Wertz, of Evansville; A Report on Bacteriology, by Dr. Theodore Potter, of Indianapolis; The president's address, by Dr. J. H. Ford, of Wabash; Mistakes in the Treatment of Clubfoot, by Dr. W. V. Morgan, of Indianapolis; Hepatotomy for Hydatid Degeneration of the Liver, by Dr. L. J. Willien, of Terre Haute; The Surgical Treatment of Internal Hæmorrhoids, by Dr. F. W. Bassinger, of Petersburg; Pregnancy complicated by Ovarian and Fibroid Tumors, by Dr. L. H. Dunning, of Indianapolis; The History and Treatment of Diphtheria in Bartholomew County in 1896 and 1897, by Dr. S. M. Voorheis, of Columbus; A Review of the Recent Epidemic of Diphtheria in the City of Columbus, Indiana, by Dr. George T. McCoy, of Columbus; Some Observations on the Sequelæ of la Grippe involving the Accessory Cavities of the Nose, by Dr. L. C. Cline, of Indianapolis; The Autotoxic Origin of Insanity and Epilepsy, by Dr. W. B. Fletcher, of Indianapolis; The Dry Method in Intra-uterine Surgery, by Dr. Edwin Walker, of Evansville; Conservative Renal Surgery, by Dr. F. J. Hodges, of Anderson; Rectal and Sigmoid Diseases Secondary to Other Pelvic Disorders, by Dr. H. O. Pantzer, of Indianapolis; Congenital Malformations and their Medico-legal Aspects, by Dr. C. Stoltz, of South Bend; General Remarks on Bloodletting, by Dr. Guido Bell, of Indianapolis; Local Diagnosis in Disease of the Nervous System, by Dr. A. E. Sterne, of Indianapolis; A Report of a Case of Omphalopagus, by Dr. Henry Gers, of Washington; Dental Pathology in its Relation to Other Diseases, by Dr. H. C. Kahlo, of Indianapolis; The Functional Examination of the Ear, by Dr. W. Stevenson, of Richmond; and Non-bacterial Factors in Infectious Diseases, by Dr. Theodore Potter, of Indianapolis.

Next Year's Meeting of the American Medical Association.—Dr. J. W. Graham, of Denver, writes as follows:

"The medical profession of this city and State, after careful consideration, have decided to extend to the American Medical Association, at their coming meeting in Philadelphia, a most cordial invitation to meet in Denver in 1898. We have a sufficient fund pledged to guarantee handsome entertainments, and the railroads are in hearty sympathy with the movement and have promised low rates. Arrangements will be made to enable delegates and their families to visit parts of the Rocky Mountains free of charge, and at nominal excursion rates to visit Colorado Springs, the medicinal springs at Glenwood that are becoming so famous, and all other points of interest. Believing we can make a meeting of the association in Denver in 1898 unusually attractive and profitable to all, apart from the scientific programme, I ask your cordial support and influence."

The Late Dr. Leoncio Ros.—The medical board of the Woman's Hospital records with deep sorrow the death of Dr. Leoncio Ros, one of the senior assistant house surgeons, whose career has been suddenly ended by an accident which destroyed his life while in the performance of the duties incident to his position.

Dr. Ros served the hospital with great faithfulness and most conscientiously. He had earned the respect and confidence of his associates. His attractive personal qualities and his devotion to his profession already augured well for a brilliant future.

We desire to extend to the members of Dr. Ros's family our sympathy in this sad bereavement.

It is ordered that a copy of this minute be sent to his family, and also that this minute be published in the New York *Medical Record* and the *New York Medical Journal.*

T. GAILLARD THOMAS, M. D.,
THOMAS ADDIS EMMET, M. D.,
[Signed.] HENRY D. NICOLL, M. D.,
CLEMENT CLEVELAND, M. D.,
BACHE EMMET, M. D.,
HORACE TRACY HANKS, M. D.,
Secretary.

May 18, 1897.

The Antitoxine Treatment of Diphtheria in Chicago.—Under the striking heading of The Diphtheria Antitoxine Balance Sheet, the *Bureau and Division Reports* issued by the department of health for April, 1897, it is stated that, up to the close of 1896, from the beginning of the antitoxine treatment as an organized branch of the department work, on October 5, 1895, there had been appropriated by the city council and expended through the antitoxine corps for services and material in the treatment and prevention of diphtheria, a total of $23,495.22. The work is summarized as follows:

Total number of persons reported to have diphtheria visited by the department physicians..	2,981
Total number found to have diphtheria	2,436
Total number of cases in which antitoxine was allowed to be used	2,302
Total number of antitoxine-treated that recovered	2,146
Total number of antitoxine-treated that died...	151

Death-rate under the antitoxine treatment, 6.56 per cent.

Experience shows, says the report, that the average mortality of diphtheria previous to the introduction of antitoxine was about 35 per cent. of all cases—30 per cent. in hospitals and 40 per cent. in private practice. At this rate (35 per cent.) there would have been 806 deaths among the 2,302 cases had not antitoxine been used.

Total number of exposed persons on whom the antitoxine was used..........................	2,016
Total number of these subsequently attacked with diphtheria............................	14

Experience shows, the report continues, that fully half of those exposed, under the conditions which obtained in these 2,016 cases, would have been attacked with diphtheria; and of those attacked 352, or 35 per cent. of the 1,008, would have died if not treated with the antitoxine. Only 14 out of the 2,016 exposed were attacked and none died. It is well within bounds to allege a direct saving of at least 1,200 lives by the introduction and use of antitoxine in diphtheria by the Chicago health department during the fifteen months ending December 31, 1896.

It is added that this reduced diphtheria death-rate has been fully maintained during the first four months of 1897. In January there were 76 deaths from diphtheria as against 118 in 1896 and 180 in 1895. In February there were 40 deaths and 92 in 1896 and 102 in 1895. In March there were 57 deaths and 75 in 1896 and 76 in 1895. In April there were 47 deaths and 74 in 1896 and 63 in 1895. To summarize, there were 221 deaths from diphtheria for the first four months of 1897 as against 359 for 1896 and 421 for 1895. In the total number of cases treated by the department the percentage of deaths during the first four months of 1897 was 5.6 and for the corresponding period of 1896 it was 6.3.

Changes of Address.—Dr. C. P. Ambler, from Asheville, N. C., to the Temple Court Building (rooms 4 and 5), New York; Dr. John H. Girdner, to No. 31 West Forty-fifth Street, New York; Dr. F. Park Lewis, to No. 454 Franklin Street, Buffalo; Dr. Edward N. Liell, from New York to No. 813 Laura Street, Jacksonville, Florida; Dr. S. E. Milliken, to No. 449 Elm Street, Dallas, Texas; Dr. F. H. Ross, to No. 278 Bridge Street, Brooklyn; Dr. C. M. Rosser, to No. 449 Elm Street, Dallas, Texas; Dr. Scratchley, to No. 12 West Forty-sixth Street. New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 2 to May 15, 1897:*

ALEXANDER, CHARLES T., Colonel and Assistant Surgeon General. By direction of the President, his retirement from active service, May 3d, by operation of the law, is announced.

SKINNER, GEORGE A., First Lieutenant and Assistant Surgeon, will proceed to Fort Spokane, Washington, and report for temporary duty during the leave of absence of MORRIS, EDWARD R., Captain and Assistant Surgeon, for six months, to take effect on or about May 18th.

The following-named officers are detailed to represent the Medical Department of the Army at the seventh annual meeting of the Association of Military Surgeons of the United States at Columbus, Ohio, on May 25th, 26th, and 27th: GIBSON, ROBERT J., Captain and Assistant Surgeon; LIPPINCOTT, HENRY L., Major and Surgeon; and WATERS, WILLIAM E., Lieutenant Colonel and Deputy Surgeon General.

BALL, R. R., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of two months.

FORWOOD, WILLIAM H., Colonel and Assistant Surgeon General, MAUS, LOUIS M., Major and Surgeon, and EBERT, RUDOLPH G., Captain and Assistant Surgeon, are detailed to represent the Medical Department of the Army as delegates at the annual meeting of the American Medical Association, to be held in Philadelphia in June.

GODFREY, GUY C. M., First Lieutenant and Assistant Surgeon, now on temporary duty at St. Paul, will proceed on the 15th inst. to Fort Yellowstone, Wyoming, and report to the commanding officer for temporary duty with troops in the National Park during the season.

IRELAND, MERRITTE W., Captain and Assistant Surgeon, is assigned to duty with Troop K, Fourth Cavalry, during the season at the Yosemite National Park, California.

JARVIS, NATHAN S., Captain and Assistant Surgeon. The leave of absence granted him is extended to July 1st, at which time his resignation has been accepted by the President to take effect.

STRAUB, PAUL F., First Lieutenant and Assistant Surgeon, is assigned to duty with Troop C, Fourth Cavalry, during the season at Sequoia National Park and General Grant National Park, California.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending May 8, 1897:*

BABIN, H. J., Medical Inspector. Detached from the U. S. Steamer San Francisco on relief, ordered home, and granted leave of absence for three months.

ELLIOTT, M. S., Assistant Surgeon. Detached from the U. S. Steamer Columbia and ordered to the U. S. Steamer Indiana.

FLINT, J. M., Medical Inspector. Ordered to examination for promotion, Washington, May 12th.

GRAVATT, C. U., Surgeon. Ordered to the U. S. Steamer San Francisco (fleet) by steamer, May 22d.

HAWKE, J. A., Medical Inspector. Detached from the U. S. Steamer Philadelphia on relief, and granted leave of absence for three months.

LOWNDES, C. H. T., Passed Assistant Surgeon. Ordered to duty at Marine Headquarters.

SMITH, G. T., Passed Assistant Surgeon. Ordered to the Naval Hospital, New York, temporarily, May 15th.

WISE, J. C., Medical Inspector. Detached from Marine Headquarters, Washington, May 15th, and ordered to Columbus, Ohio, as a delegate to the Association of Military Surgeons. After duty at Columbus he is ordered to the U. S. Steamer Philadelphia as fleet surgeon.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Week ending May 8, 1897:*

Promotion.

Sprague. E. K., Assistant Surgeon. Commissioned as Passed Assistant Surgeon. May 7, 1897.

Society Meetings for the Coming Week:

Monday, *May 24th:* New Hampshire Medical Society (first day—Concord); Medical Society of the County of New York; Lawrence, Massachusetts, Medical Club (private); Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *May 25th:* North Dakota State Medical Society (Grand Forks); New Hampshire Medical Society (second day); New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Medical Societies of the Counties of Queens (annual—Garden City), Rockland (annual), and Ulster (annual—Kingston), N. Y.; College of Physicians of Philadelphia (Section in General Medicine); Boston Society of Medical Sciences (private); Richmond, Virginia, Academy of Medicine and Surgery.

Wednesday, *May 26th:* Connecticut Medical Society (first day—Hartford); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Societies of the Counties of Albany, Monroe (annual—Rochester), and Tompkins (annual), N. Y.; Philadelphia County Medical Society.

Thursday, *May 27th:* Connecticut Medical Society (second day); New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Roxbury, Massachusetts, Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *May 28th:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Medical Society of Saratoga Springs, N. Y.; Northern Medical Association of Philadelphia; Philadelphia Clinical Society; Philadelphia Laryngological Society.

Births, Marriages, and Deaths.

Married.

Barnes—Rogers.—In Milwaukee, on Wednesday, May 12th, Dr. J. Steele Barnes and Miss Fannie Rogers.

Bibby — Calhoun. — In Coffeeville, Mississippi, on Wednesday, May 5th, Dr. F. P. Bibby and Miss Bessie Calhoun.

Keating—Rogers.—In Rutland, Vermont, on April 14th, Mr. Frank M. Keating and Miss Lela Maud Rogers, daughter of Dr. S. F. Rogers, of Troy.

Smith—Pease.—In Troy, N. Y., on Thursday, May 13th, Dr. Frederick Adams Smith and Miss Mary Antoinette Pease.

Died.

Burdett.—In Clinton, Massachusetts, on Monday, May 10th, Dr. George W. Burdett.

Goddard.—In Rochester, on Monday, May 10th, Frederick, only son of Dr. Frederick H. Goddard.

Lemrow.—In Troy, N. Y., on Monday, May 17th, Dr. W. H. Lemrow, in the thirty-third year of his age.

McEnery.—In New Orleans, on Saturday, May 8th, Dr. Henry A. McEnery, in the thirty-second year of his age.

Munger.—In New London, Connecticut, on Friday, May 14th, Dr. E. L. Munger, in the forty-eighth year of his age.

Letters to the Editor.

ELECTRIZATION OF THE STOMACH.

New York, *May 10, 1897.*

To the Editor of the New York Medical Journal:

Sir: In your esteemed *Journal* of April 24, 1897, Dr. S. J. Meltzer has written a reply to my article on Experiments upon the Effects of Direct Electrization of the Stomach (*New York Medical Journal,* December 12, 1896). I will deem it a favor if you will print the few following remarks:

1. I have never doubted either the veracity or the ability of my friend, Dr. S. J. Meltzer. But each experiment can be made in different ways. If an investigator reaches a certain conclusion by means of an experiment, some one else may occasionally arrive at a different view by a similar, although not exactly identical, trial. Meltzer experimented mostly on dogs, which have to be narcotized. I selected principally frogs, because they are so easily procured and may be experimented upon without either chloroform or ether, which thus represents a more normal state. With regard to the strength of the faradaic current, I have called a current "weak," if it could be slightly felt at the skin, and "strong," if a good contraction of the muscles of the arm of a man could be obtained. I believe that in this I am in harmony with most writers.

2. In his last article Meltzer says: "It was my intention to make a strictly scientific statement of bare facts as I obtained them by physiological methods, without utilizing them for any practical purpose." In his original paper (*New York Medical Journal,* June 15, 1895), however, Meltzer starts with a description of the *clinical* methods of applying electricity to the stomach, and says at the end of his paper: "My statements have reference only to the animals I experimented with. However, abdominal surgery might offer an opportunity to test their validity for the *human* being."

3. Meltzer reproaches me for not having given full credit to the fact discovered by him that, "both poles being within the stomach (touching the mucous membrane), even a strong current does not produce a contraction." When discussing another man's work we have to go by our own judgment as to its value and not by the author's opinion. Referring to experiments on frogs, I must say that there was a peristaltic contraction of the stomach when the bipolar electrode was applied to the gastric mucosa. The observation just mentioned led Meltzer to believe that the gastric mucous membrane offered a very great resistance to the entrance of the faradaic current, as may be seen from his first article, in which he says:

"The mucous membrane of the digestive canal offers a considerable resistance to the penetration of the faradaic current to the muscular coat; the greatest resistance is found in the mucous membrane of the stomach." I found by actual experiments that the gastric mucosa did not offer so very much resistance. As a reply to this Meltzer says: "I have spoken a few times of the 'resistance' the mucosa offers to the penetration of the current, simply as a matter of convenience, to use a single word instead of a whole sentence." Max Einhorn, M. D.

CYANOSIS FROM ACETANILIDE.

Allegheny, Pa., *May 16, 1897.*

To the Editor of the New York Medical Journal:

Sir: In some of our leading works on therapeutics I find it stated under the physiological action of acetanilide that the peculiar cyanosis of the face and fingers noticed on the administration of maximum doses of this drug is due to the conversion of hæmoglobin into methæmoglobin and the breaking down of red blood-corpuscles. Neither of these statements is borne out by experiment unless very large doses are given or the subject possesses a strong idiosyncrasy for the drug; yet we find that the peculiar cyanosis (decided by blue tint of face and finger nails) often occurs when there are no other symptoms of poisoning and the dose has not been excessive. This cyanosis I have found to be due to the *liberation of free aniline in the blood*, which disappears soon afterward, as soon as it is eliminated by the kidneys and skin. A similar cyanosis, though more pronounced, is found in the workmen of aniline-color works. This point may not be of vast therapeutic importance, yet may be of interest as an additional factor in the physiological action of acetanilide, which seems to have been overlooked or unknown, and I consequently wish to submit it on that account. Carl F. Bachmann, M. D.

Proceedings of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Fourth Triennial Meeting, held in Washington on Tuesday, Wednesday, and Thursday, May 4, 5, and 6, 1897.

The President, Dr. William H. Welch, of Baltimore, in the Chair.

(*Continued from page 670.*)

The second day's session was under the joint charge of the Association of American Physicians, the American Physiological Society, and the American Pædiatric Society.

Internal Secretions considered in their Physiological, Pathological, and Chemical Aspects was the general topic for discussion.

Dr. William H. Howell, of Baltimore, contributed the opening paper. He said that some years ago Brown-Séquard had revived an old idea in medicine when he announced his belief in the therapeutic value of extracts made from the different animal tissues. Physicians in general had, however, been chiefly interested in the remarkable results obtained with extracts of the thyreoid gland. Not only the thyreoid, but the accessory thyreoids had been shown beyond a reasonable doubt to possess an important internal secretion. Thus, extracts of thyreoid tissue, when absorbed into the blood, were known to remove or ameliorate the evil effects resulting from loss of function of the thyreoid. This action had been accounted for chiefly by two hypotheses. One was called the antitoxic, and assumed the presence of an antitoxine in the secretion; the other, called the trophic or neurotrophic, assumed that the secretion of the thyreoid acted normally by promoting or regulating the ordinary metabolism of the body. This theory was, perhaps, less objectionable than the first, because less specific. The parathyreoids seem to be different from the thyreoid both in structure and in origin, and the tendency of recent work was to show that the functional value of the thyreoids and parathyreoids was not identical.

The complete removal of the suprarenals caused the appearance of symptoms suggestive of Addison's disease —extreme muscular debility and feeble cardiac action. Blood drawn from the renal vein, when injected into normal animals, produced the same effect as injections of extract of the suprarenals—a slowing of the heart's action and a rise of blood pressure, apparently as a result of stimulation of the cardio-inhibitory centre in the medulla. The substance producing this result was not found in the suprarenals in Addison's disease.

Regarding the pituitary body, Dr. Howell said that observations on it had been confined almost entirely to the anterior lobe, although he had himself recently carried out some experiments with extracts obtained separately from the glandular and from the infundibular lobes. It had been found that extracts of the infundibular portion had a distinct effect on the heart, causing a more prolonged retardation of its action than the extract of the suprarenals. This was much less marked if the animal was etherized, or if the vagi had been severed. Negative results were obtained with injections of the extracts from the anterior lobe.

Professor Russell H. Chittenden, of New Haven, said that the term internal secretion should be limited to those specific products which were produced in certain glands and possessed well-defined physiological actions. When the extract of the thyreoid gland was administered to healthy individuals, it produced a decided effect on the metabolism of the body, resulting in loss of weight and in increased excretion of phosphoric acid, nitrogen, and water. It was probable that the thyreoid gland prevented the formation of toxic substances in the body by its direct influence on general metabolism. Chemically, the thyreoid gland was characterized by the presence of a peculiar compound proteid, called by Hutchinson "colloid matter," but more recently known as "thyreo-iodinin" or "iodothyreine." This substances resisted ordinary decomposing agents. The gland could be boiled for many hours with dilute sulphuric acid without destroying this active principle. It was a non-proteid cleavage product characterized by containing both iodine and phosphorus. In cases of goître, iodothyreine had been found more effective than the gland itself. The fact that, so far as known, iodine was not normally present in other tissues naturally suggested the question regarding the significance of the iodine, but, inasmuch as the thyreoids of some children did not contain iodine, and the proportion of iodine in an effective therapeutic dose of iodothyreine was infinitesimal, it was to be presumed that the iodine played no important part in the physiological action of thyreoid extract.

Dr. J. George Adami, of Montreal, discussing the general subject of internal secretions from the standpoint of the pathologist, distinguished three orders of conditions—viz.: 1. Glandular inadequacy. 2. Glandular overactivity, as from excess of internal secretion without due compensation. 3. Compensation. He said that in this third class there might be lesions of the gland or an altered systemic condition unaccompanied by symptoms. Where morbid changes were found in the pancreas in diabetes there were usually atrophy and destruction of the gland, yet this was not uniformly the case. Again, there might be advanced atrophy of the pancreas without diabetes.

Dr. Francis P. Kinnicutt, of New York, discussing the subject from the clinical standpoint, said that there was abundant proof that in severe and long-standing cases of myxœdema a cure could be effected by the administration of thyreoid extract, but that this cure would not be permanent unless the use of the remedy was continued throughout the lifetime of the patient. In sporadic cretinism this remedy caused a speedy disappearance of the myxœdematous symptoms, with rapid growth of the skeleton and improvement in the mental condition. In young persons this growth of the skeleton might amount to an increase of stature of about a foot in the first three years of treatment. If begun sufficiently early, and carried out systematically, this treatment promised to make out of the cretin child a healthy adult. In the use of this remedy in goître, it should be noted that all varieties of goître were not affected alike. The maximum of improvement was observed in the simple hyperplastic form, and the least in the cystic variety. Thyreoid extract had also been used to a limited extent in certain mental disorders, and Dr. M. Allen Starr had recommended it very highly in a form of mental disturbance described by him as consisting of mental depression, with anxiety and morbid fears, occurring at the climacteric. The same remedy had become quite popular in the treatment of obesity, as it caused a speedy and very marked reduction in the weight without the diet being restricted or the general health affected injuriously. It had been found, however, that very soon after the treatment was discontinued the obesity would return. The thyreoid preparations had been advocated in phthisis, on the ground that they influenced nutrition favorably, but Dr. Kinnicutt said that he had given them a thorough trial in his hospital service, and with negative results. Of forty-eight cases of Addison's disease treated with thyreoid extract, six had been reported as cured, twenty-two as improved, and eighteen as unimproved. In two of the cases the symptoms were made worse.

Dr. James J. Putnam, of Boston, spoke of the relation of infantilism to myxœdema, and of the part played by the internal secretions in acromegaly, giant growth, and allied disorders.

Dr. William Osler, of Baltimore, exhibited a series of lantern slides illustrating the very remarkable results that had been obtained in the treatment of cretinism by thyreoid extracts.

The president's address was then delivered. (For an abstract of it, see page 680.)

(To be continued.)

Book Notices.

Vita Medica. Chapters of Medical Life and Work. By Sir Benjamin Ward Richardson, M. D., LL. D., F. R. S. London, New York, and Bombay: Longmans, Green, & Co., 1897. Pp. xvi–495.

In a note subjoined to the preface the author's son states that the chapters which constitute this volume were finished by their writer a few hours before the beginning of the illness which ended fatally, and in consequence the final proofs were not subjected to the author's revision. But the accomplished editor of the *Asclepiad* was such an experienced writer that one is prepared to find the subject matter treated not only with a running pen but with the pen of a master.

Dr. Richardson wrote in the first chapter that he had no intention of preparing what might be called an autobiography, but rather of recording what he had seen and some events he had taken part in during his busy life. Since he was a keen observer, a diligent recorder, a careful analyzer of the steps that lead from cause to effect, his writings have had the stamp of thoroughness and of originality.

In these pages we are admitted into his intimate life, and are introduced to his reasons for studying medicine, to the student life of the early portion of this century, to the phases of a London career in mid-century, and to various matters of special investigation.

The delightful style of the writer and the interesting matter of his discourse combine to make this one of the most interesting medical autobiographies that have been written.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Vol. IX. Diseases of the Digestive Organs. New York: William Wood and Company, 1897. Pp. 3 to 820.

The first paper in this volume is by Professor Johann Mikulicz and Dr. Werner Kümmel, who complete the description of the local diseases of the mouth, the first portion of which appeared in the eighth volume of the series.

Professor C. A. Ewald describes the diseases of the intestines, except infectious diseases, parasites, and hernia. While germ-free milk is recommended for children, there is no description of the method of pasteurizing milk. That portion of this section which relates to perityphlitis is very satisfactory; the author evidently agrees with Dr. W. H. Draper's epigram "that the most useful article in the armamentarium of a good physician is a good surgeon," as he holds that it would smack of insanity to subject every person with perityphlitis to the uncertainties of an operation, and he maintains that there is a field for usefulness in the medicinal treatment of this common complaint.

The section on hernia is written by Dr. V. P. Gibney and Dr. J. B. Walker, who consider the subject with as little reference to surgical treatment as is possible, in order to meet the conditions of this work.

Dr. Alfred Stengel is the author of the section on diseases of the spleen. Dr. M. Semmola and Dr. C. Gioffredi are the authors of the section on diseases of the liver, which occupies one third of the volume. Dr. John B. Murphy has written the section on diseases of the gall bladder. The section on movable kidney is by Dr. Kendal Franks, who is disposed to ascribe considerable importance to this abnormity; his reason for the infrequency with which the condition is met in the post-mortem room does not seem to be conclusive.

The editor is to be congratulated upon the industry he displays in the discharge of the task he has undertaken.

Clinical Lessons on Nervous Diseases. By S. Weir Mitchell, M. D., LL. D. Edin., Honorary Fellow of the Royal Medico-chirurgical Society of London, etc. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. vii–13 to 305. [Price, $2.50.]

The keynote of this volume may be conveyed by the author's prefatory words in the eighth chapter, that "there is some danger lest amid the attractive fascinations of novel bacteriological study we may lose sight of the more everyday need for incessant clinical watchfulness as to the lesser symptomatic novelties which are yet to be detected." Throughout the book the lesson is reiterated to take into account all symptoms—to discard none as valueless and insignificant, to search for the cause of each manifestation in a spirit of patient scientific investigation rather than to attempt to explain it by pseudo-scientific empiricism. "For the unthoughtful there is only the final accident; for the man who thinks there is link on link of the chain of preparatory states."

The eighteen chapters included in the work are devoted to the description of various neuroses, and one of the chapters is an abstract of the author's remarks on reflex ocular neuroses before the Section in Ophthalmology of the College of Physicians of Philadelphia in 1894; he now reiterates the experience he then reported, that he has had no success in the treatment of chorea or epilepsy by cutting the tendons of the eye muscles. In the second paragraph on page 77 lids is made to read "lips."

The volume has the attractive and suggestive features that are characteristic of this author's writings, and it is a useful contribution to the literature of some overlooked or meagerly described neuroses.

Aphasia and the Cerebral Speech Mechanism. By William Elder, M. D., F. R. C. P. Ed., Physician to Leith Hospital. With Illustrations. London: H. K. Lewis, 1897. Pp. xii–259. [Price, 10*s.* 6*d.*]

The greater part of this work consists of a doctorate thesis which the author has published as an attempt to elucidate the question of the disturbances of the central mechanism concerned in written and spoken speech.

The historical introduction shows how meagre our knowledge of speech disturbance was prior to 1861, when Broca recorded his cases of aphasia, and how much has been done since that time to elaborate our knowledge of such disorders.

The author outlines the means by which speech is received, retained in the memory, and reproduced, and the different routes in the brain that are concerned in speech reception and production. Having thus localized the speech-reception and the speech-production centres to special areas in the cerebral cortex, he proceeds to explain the mechanism by which speech and thought are received, stored up, and reproduced by the brain.

The subsequent chapters are devoted to a careful consideration of the clinical varieties of aphasia, agraphia, amnesia, and amimia, and to aphasia from a surgical point of view.

The work is compact, and may be recommended as a satisfactory monograph on this interesting subject.

Elementary Bandaging and Surgical Dressing, with Directions concerning the Immediate Treatment of Cases of Emergency. For the Use of Dressers and Nurses. By Walter Pye, F. R. C. S., Late Surgeon to St. Mary's Hospital. Revised and in part rewritten by G. Bellingham Smith, F. R. C. S., Surgical Registrar, Guy's Hospital. Seventh Edition. Philadelphia: W. B. Saunders, 1897. Pp. viii–218. [Price, 75 cents.]

This little book is in reality a pocket edition of Pye's *Surgical Handicraft,* which is already well known to the profession.

It contains general directions for the use of various kinds of bandages, splints, and plaster, together with practical instruction in the treatment of simpler wounds, burns, ulcers, etc. It also devotes several chapters to the treatment of hæmorrhage, shock, convulsions, and other emergencies.

The subject matter is well arranged, clearly and concisely expressed; and in no other book of its size published in English will one find more useful information upon these subjects. It is to be especially recommended as a convenient handbook for surgical nurses and hospital internes.

Handbook of Massage. By Gustaf Norström, M. D., of the Faculty of Stockholm. New York, 1896. Pp. 246.

The author of this brochure again brings prominently forward his views in regard to the frequency of palpable myositic deposits, their importance as a cause of hemicrania and other neuralgic affections, and the indications for their treatment by massage. This subject appears to have attracted but little attention in this country, though much has been written in Sweden and Germany, of which Dr. Reinhardt-Natvig has recently published an excellent *résumé.* Many other subjects are treated of in the optimistic spirit of the masseur; the diffuse style and disorderly arrangement of the work, however, together with the total absence of an index, present serious obstacles to the willing investigator.

BOOKS, ETC., RECEIVED.

Manual of Static Electricity in X-ray and Therapeutic Uses. By S. H. Monell, M. D., Founder and Chief Instructor of the Brooklyn Post-graduate School of Clinical Electro-therapeutics and Röntgen Photography, etc. Illustrated. New York: William Beverly Harison, 1897. Pp. xviii–21 to 614.

Quantitative Estimation of Urine. A New System of Rapid Analysis for Medical Men and Pharmacists. Acidity, Urea, Sugar, Total Urates, Albumin, and Color. By J. Barker Smith, L. R. C. P. Lond. London: Baillière, Tindall, and Cox, 1897. Pp. 37. [Price, 1*s.*]

La condition nécessaire de la vie et de l'évolution considérée comme condition de la maladie et du dépérissement sénile de l'organisme. Introduction aux études cliniques. Par le Dr. C. Pawlinow, Professeur de clinique thérapeutique à la Faculté de médecine de l'Université de Moscou. Moscou: Alexandre Lang, 1897. Pp. 3 to 89.

Report Relating to the Registration of Births, Marriages, and Deaths in the Province of Ontario, for the Year ending December 31, 1895.

A New Powder for Acute Coryza. By Clement F. Theisen, M. D., Albany. [Reprinted from the *Albany Medical Annals.*]

Nasal Obstruction. With Particular Reference to Deviations of the Nasal Sæptum and Hypertrophic Rhinitis, and a Report of Three Hundred and Fifty Operations. By Clement F. Theisen, M. D. [Reprinted from the *Albany Medical Annals.*]

A Case of Lupus Successfully Treated by an Iodine Compound. By Archibald L. Dix, M. D., Philadelphia. [Reprinted from the *Medical and Surgical Reporter.*]

The Use of Nosophen and Antinosine in Surgery. By Claude A. Dundore, M. D., Philadelphia. [Reprinted from *Codex Medicus.*]

How can we Increase the Therapeutic Reliability of Medicinal Agents? By E. Mark Houghton, M. D., Detroit. [Reprinted from the *Journal of the American Medical Association.*]

Consular Reports. April, 1897. Commerce, Manufactures, etc.

The Study of Medicine in Europe. Benefits which the American derives therefrom. By Leon L. Solomon, M. D., Louisville, Kentucky. [Reprinted from the *Charlotte Medical Journal.*]

The Results of (Chemical) Electrolysis *versus* Divulsion or Cutting in the Treatment of Urethral Strictures. By Robert Newman, M. D. [Reprinted from the *Medical Record.*]

The Technics of Blood Study and Experiments in the Physiological Chemistry of Leucocytes. A Study in Cell Tissues and their Significance in Tuberculosis. By A. Mansfield Holmes, M. D., Denver. [Reprinted from the *Medical Record.*]

Retro-displacements of the Uterus and its Appendages; the Cause, Prevention, and Cure. By Horace Tracy Hanks, M. D. [Reprinted from the *Post-graduate.*]

The Abdominal Type of Respiration as often Employed in Singing. By O. J. Stein, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

Racial Deterioration. The Relation between Phthisis and Insanity. By Lawrence Irwell, M. A., B. C. L. [Reprinted from the *Sanitarian.*]

Concerning the Present Condition of State Medicine in the United States. By Franklin Staples, M. D., Winona, Minnesota. [Reprinted from the *Journal of the American Medical Association.*]

Syphilis of the Innocent. By Henry Alfred Robbins, M. D., Washington, D. C. [Reprinted from the *Maryland Medical Journal.*]

Traumatic Perforation of the Membrana Tympani. By Lewis S. Somers, M. D., Philadelphia. [Reprinted from the *Philadelphia Polyclinic.*]

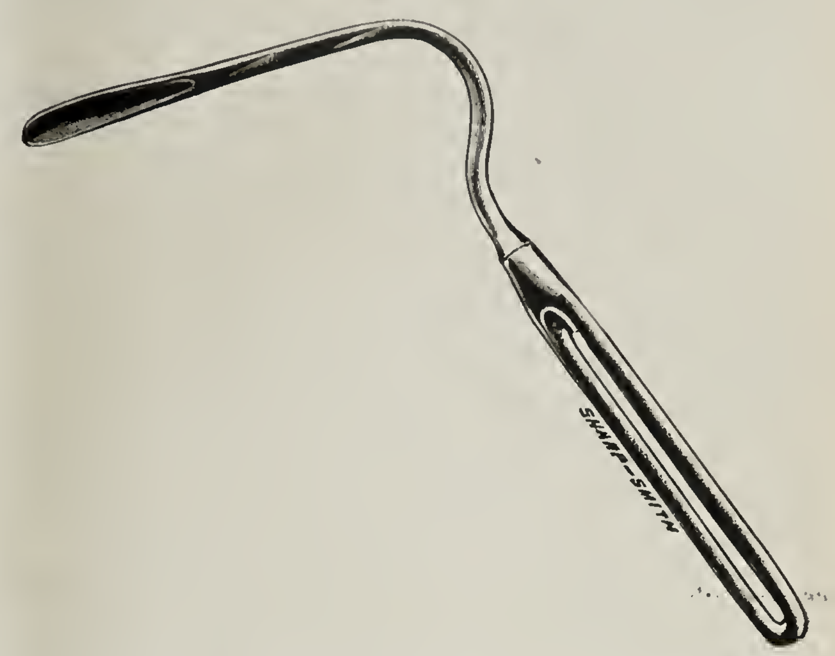
New Inventions, etc.

A NEW TONGUE DEPRESSOR.

By Henry W. Wandless, M. D.,
DALLAS, TEXAS.

In presenting this tongue depressor to the profession I do not allege anything very original or novel. It is made for me by Sharp & Smith, of Chicago. Its contour is not very much unlike that of most depressors, and is perfectly smooth throughout. On its lower surface it is very much of the shape of an ordinary teaspoon, except that its concavity is not so deep as that of a spoon. The blade broadens from the heel to the end of the blade. It is in two sizes, the larger being three quarters of an inch wide at its widest part. It does not slip if clean and dry when it is placed on the tongue. It does not scrape or injure the papillæ of the tongue, and does not produce reflex cough or retching if properly handled. It has no corrugations, whose only function, it seems to me, is to afford a hiding place for microbes. It is not objectionable to the patient and is easily kept clean. If kept in carbolic-acid solution it does not corrode.

I have used this depressor for several years and have found it most satisfactory, and it seems to fully meet all the requirements. I find the larger size better for general use. We often find patients who resist the depressor, and it is remarkable the amount of power necessary to overcome this resistance. In such cases it is only necessary to explain to the patient how to relax the tongue and faucial muscles, and assure him that he will not be hurt. If these precautions are observed, much annoyance and valuable time will be saved.



Miscellany.

The "Strawberry" Tongue in Scarlet Fever.—In the May number of the *University Medical Magazine* Dr. M. H. Fussell states that he has made a fairly exhaustive search through the works on practice in order to discover what authors have considered to be facts on the subject. Two points, he says, are to be considered: 1. What is the condition of the tongue which is considered characteristic of scarlet fever? 2. What is the appearance of the tongue to which the term strawberry has been applied, and, incidentally, when and by whom was that term first used?

All physicians, he thinks, will agree that during the first three or four days of scarlet fever the tongue is white-coated, with the papillæ prominent, sticking out through the white fur, as Flint aptly describes it, as if the tongue had been sprinkled with red pepper or red sand. After the fourth day this coating disappears, sometimes gradually, sometimes quickly, leaving the tongue of a bright, shiny red, with very prominent papillæ.

The first conditions, he says, while common in scarlet fever, and while the redness of the papillæ is more marked in that disease than in any other, do occur in many febrile affections, especially where there is irritation of the digestive tract. It is therefore, he thinks, rather a difference in degree than in kind, and can not be in itself characteristic of scarlet fever. He thinks that physicians will also agree that the more or less sudden desquamation of the tongue, leaving it bright red and rough, with prominent papillæ, does not occur in any other disease, and is therefore characteristic of scarlet fever. If the term strawberry is to be applied at all, he says, it should be to the rough, bright-red tongue with prominent papillæ.

Except in the United States, and in one or two cases in England, Dr. Fussell thinks that the foregoing description has been accepted all over the world, and he gives many quotations to prove it, of which the following are examples:

In 1865, Trousseau said: "The condition of the tongue is pathognomonic. It is as characteristic of scarlet fever as the appearance of pustules on the mucous membrane of the mouth is of small-pox. On the first day it is coated white with red point and edges. The redness gradually increases in extent, and on the fourth or fifth day the coating has completely disappeared. The tongue is then of a bright-red color, is swollen, and the prominent papillæ gave it the appearance of a strawberry."

The *first* French description that compares this appearance to a strawberry, which Dr. Fussell has found, is in the *Bibliothèque du médecin praticien*, vol. vi, 1847. Every French writer without exception describes the characteristic tongue as it is above described, and none speak of the white tongue as being characteristic.

Tweedie, writing in 1842 in the *System of Practical Medicine*, says: "When the tongue is clean and moderately red, the elongated, enlarged, and deep-scarlet papillæ give it a very characteristic appearance."

Watson, in his *Practice of Physic*, published in 1845, says: "The appearance of the tongue is peculiar; it is at first white with prominent papillæ; the red points multiply; the fur clears away, leaving the tongue red, clean, and raw-looking. It appears like a strawberry." This is the first time the author says he has found the word strawberry used in any description.

Frederick T. Roberts, in his article on the tongue in *Quain's Dictionary of Medicine*, says: "In scarlatina the papillæ tend to become much enlarged and prominent, so that they project through the fur, and the tongue in many cases presents the so-called strawberry appearance."

Strümpell, American edition, p. 41, says: "The first coating clears off and then the tongue presents a characteristic appearance. It is diffusely red, covered with little red elevations composed of swollen papillæ (strawberry tongue)." The original edition uses the word raspberry, not strawberry.

Von Ziemssen's *Handbuch*, vol. ii, says: "In the beginning the whole tongue is coated, and on the second or third day the whole coating is shed, as occurs in no other disease."

Eichhorst, *Handbuch der speciellen Pathologie und Therapie*, 1884, says: "The whole tongue is coated yellow or white, and the red papillæ show prominently through it. In a few days the coating disappears, and finally the surface is entirely clean with swollen papillæ, and has more or less the appearance of a strawberry."

It seems, then, says the author, that all writers on medicine in England, France, and Germany agree that the tongue of scarlet fever is peculiar or pathognomonic in that it is, for the first few days, white-coated with prominent papillæ, and that on the third or fourth day this coating desquamates, leaving the tongue bright red with prominent papillæ. The latter is especially the characteristic appearance, and to it alone is applied the term strawberry, or by some, raspberry or mulberry. Most of the writers of the United States, says Dr. Fussell, agree to this, with the marked exception of Eberle, as early as 1831, and Whittaker, Tyson, Osler, Wood, and Fitz, in the last year or two.

Dr. Fussell is of the opinion that the tongue which is characteristic of scarlet fever, and is pathognomonic when it is present, is the bright-red, clean tongue with prominent papillæ. This condition was described before the term strawberry was applied to it, notably by Guersent, Royer, Tweedie, and Dickson. The term strawberry was first applied in 1845, and, so far as Dr. Fussell has been able to determine, Watson was the first author who so used the word.

Cardio-pulmonary Murmurs.—In the May number of the *Edinburgh Medical Journal* there is a long article by Dr. Gordon Sanders in which he gives an account of a theory propounded by M. Potain, of Paris, as to the nature of inorganic cardiac murmurs, and an analysis of the arguments upon which it is based. Potain believes, says the author, that most, if not all, inorganic murmurs arise in the borders of lung which surround the heart and intervene between that organ and the thoracic wall, especially on its upper and left border. By the movement of the heart in systole and diastole the air in these parts of the lung is alternately aspirated and expelled. This movement of the air, chiefly with inspiration, but also more rarely with expiration, under certain conditions produces a murmur.

Dr. Sanders refers not only to the character of inorganic murmurs, the mechanism which Potain maintains underlies their cause, and the argument he brings forward in support of this; he also refers to Potain's description of these inorganic murmurs which, according to him, are characterized by their site, their time, their tone, and their variability, with change of position and respiration.

Potain defends his theory by arguments which the author divides into three groups, according to the nature of the proof. In the first group, the evidences are drawn from auscultation; in the second, from tracings of the movements of the chest wall by means of a cardiograph; in the third, experimentally, from tracings of the movements of the heart itself. The argument, briefly summed up by Dr. Sanders, is as follows: Potain asserts that all previous theories to account for the presence of inorganic murmurs are inadequate. He believes inorganic murmurs to be produced in the lung surrounding the heart by the expansion of the lung suddenly filling the space left vacant by the movements of the heart. And the proof of this he finds in the fact that lung exists in those situations in which murmurs occur; that by experiment, on displacing the lung, the murmur disappears; that clinically the murmur may transform itself into one with a respiratory rhythm, and that tracings of the thoracic and cardiac movements prove that the heart and lung act in such a manner as to produce the required phenomena at the sites where the murmurs are usually to be heard.

Dr. Sanders admits that this argument is carefully worked out, complete in logical form and sequence, and, moreover, weighted by the authority which belongs to the words of so well known a physician. At the same time, he says, it fails to carry complete conviction, and several of the facts do not seem to support the conclusions which have been based upon them. The theory also, he continues, fails to produce conviction in detail and as a whole, for, he adds, if we reflect on the commonest of inorganic murmurs which it seeks to explain—namely, the chlorotic—we find it hard to believe that a murmur so comparatively distinct and individual, so directly localized to one part of the chest, and apparently to one particular part of the cardio-vascular apparatus, should yet be explained by a cause so vague and fluctuating as the effect of the movements of the heart on the lung. For the lung is an organ very subject to variations in its form, in its air capacity, in the condition of its component parts; and therefore, one would think, likely to vary widely in the sounds it produces when acted on by the heart. Yet the murmur under discussion does not as a rule vary much in character. The inorganic murmur heard in the pulmonary area changes but little in character whatever the superadded condition of the lung may be.

Further, says the author, the ordinary murmur of anæmia is, as regards site and distribution at least, according to most authors, in close correspondence with the rare organic murmur produced by disease of the pulmonary valve. It is, therefore, difficult to see why, in almost if not quite the same situation, an inorganic murmur should arise, constantly produced by a mechanism so entirely different from that which produced the organic. All these reasons, he thinks, negative the possibility of an extracardiac origin for this murmur.

It is not probable, then, he continues, that Potain's theory will obtain a wide acceptance as explaining the origin of the majority of inorganic murmurs. At the same time, it is possible that it may be admitted in the case of certain murmurs not otherwise easily explicable. There occur from time to time, in the experience of most physicians, murmurs of a peculiar nature which baffle and confound observers as to whether their origin is organic or inorganic. Neither do they present either the cardiac or vascular proofs of organic disease, nor is there an obvious cachexia or debility to account for their inorganic nature. They present some of the qualities of each, but not all of either. Some of them may have such an origin as Latham and Fowler have indicated. It is in this direction, Dr. Sanders says, that possibly Potain's work may bear fruit. In dealing with murmurs of such puzzling nature, it will be well to bear in mind that a limited number may be accounted for by the action of the heart upon the lung; and that they may therefore be examples of cardio-pulmonary murmurs.

The Poison of the Cobra.—When this poison is introduced into the blood, says a writer in the *Indian Lancet* for April 1st, the corpuscles lose their shape and become fused together, and the blood loses its power of coagulation. The results of observations made by Dr. Martin, of Sydney, led him to infer that the snake venom caused a profound change in the white corpuscles, the change being of such a nature as to cause these corpuscles to extrude their contents, and observations made in India show that this actually takes place, as the distortion and fusing together of the red corpuscles can easily be explained in this way. The cause of death appears to be paralysis of the respiratory centres, owing to the corpuscles losing the power to do their proper work of carrying oxygen; death is consequently painless.

Mr. C. A. Mitchell, says the writer, thinks that, owing to the similarity of constitution existing between the poisonous albuminoid and the normal constituents of the blood, it will not be easy to find a drug which will neutralize the one without injuring the other. Sir Joseph Fayrer, however, has shown that cobras and other equally venomous snakes are not affected by cobra poison, while some which are much less venomous are slightly affected, the rule being that the more venomous are the least injured. It seems, therefore, that the blood of venomous snakes contains some principle which renders the venom harmless, and possibly this fact, says the writer, may lead to the discovery of an antidote. Mineral acids or caustic alkalies neutralize the venom, but they would be just as dangerous substances to inject into the circulatory system as snake poison itself. Permanganate of potassium is a very powerful neutralizing agent, but unless used very promptly it would be of no avail, as its action is only local, and the venom is absorbed into the circulation almost at once.

In order to obtain the poison for experiment, the snake is held firmly down by the neck, and caused to bite repeatedly at a large leaf, on which the venom collects. As thus obtained, it is a yellowish, frothy liquid, which may be preserved for some months in a stoppered bottle, but eventually decomposes and becomes innocuous. If, however, the liquid is allowed to evaporate in the air it leaves a deposit of yellow granules of crystalline appearance. These can be preserved for any length of time without losing their toxic power, as has been proved by experiments on animals with a specimen which had been kept for twenty years.

The writer alludes to another snake known as the ophiophagus (snake-eater), or hamadryas, which, he says, is perhaps the largest and deadliest of all the poisonous snakes, save only the bushmaster, of South America. It grows to a length of fourteen feet or more, and closely resembles the cobra in general appearance, save that it is longer in proportion to its thickness, and the hood is somewhat narrower; it is even more graceful in its movements, and can turn more quickly; consequently it is an exceedingly dangerous snake to catch, and very difficult to handle until its fangs are extracted. The color varies with the locality, being some shade of olive green or brown, while the young snakes are so peculiarly colored that they might easily be mistaken for a distinct genus.

The writer states that this deadly serpent is found in many different countries, although it is not very common, which is a fortunate circumstance, as, unlike most snakes, it will deliberately attack and pursue men, and its bite is instantly fatal. The venom when extracted is of a bright golden yellow color. No very careful examination of it has yet been made, but the writer thinks that in all probability its mode of action is similar to that of the cobra or tiger-snake venom.

Transient Lesions of the Retina and Chorioid from Bruises of the Eyeball.—At a recent meeting of the Section in Ophthalmology of the College of Physicians of Philadelphia, Dr. Edward Jackson reported three cases. In each case the injury had been severe enough to cause some marking of the lids or eyeball. Impairment of sight was noticed immediately, and examination showed œdema of the retina with yellowish rounded spots of chorioidal exudation. The haziness of the retina cleared up within twenty-four or forty-eight hours. The chorioidal spots faded away in from three days to a week, each being followed by an area of redness. In three of the cases that had been observed long enough, recovery was complete. He called attention to the fact that, although the retinal changes had been described by other writers, in these cases the chorioidal lesions were quite as marked and more permanent; and the chorioidal changes were distributed in the arc of a circle or circles, having the centre at the optic-nerve entrance. In only one of these cases was retinal hæmorrhage detected.

Dr. G. C. Harlan said he remembered the first case referred to by Dr. Jackson and was inclined to believe, from the ophthalmoscopic appearances, that there were minute ruptures of the chorioid.

The Association of Military Surgeons of the United States.—The seventh annual meeting will be held in Columbus, Ohio, on May 25th, 26th, and 27th, under the presidency of Dr. Albert L. Gihon, of New York. The programme includes the following addresses and papers: The City of Columbus, by the Hon. Samuel L. Black, of Columbus; The State of Ohio, by the Hon. Asa S. Bushnell, of Columbus; The Medical Profession of Ohio, by Dr. Dan Millikin, of Hamilton, Ohio; The Ohio National Guard, by Major-General Henry A. Axline, of Columbus; The Association of Military Surgeons of the United States, by Dr. Nicholas Senn, of Chicago; On the Status of the Military and Naval Medical Officer, by Dr. Albert L. Gihon; A Plea for the More Efficient Organization of the Medical Department on our Ships of War, by Dr. John C. Wise, of Washington; The Work of the Medical Department on Naval Vessels, by Dr. C. A. Seigfried, of Newport, Rhode Island; The Medical Officer of the National Guard, by Dr. Leonard B. Almy, of Norwich, Connecticut; The Hospital Corps of the National Guard of Pennsylvania, by Dr. J. K. Weaver, of Norristown, Pennsylvania; The Hospital Corps in Connecticut, by Dr. Julian La Pierre, of Norwich, Connecticut; The Medical Department of the Mexican National Army, by Dr. Louis M. Maus, of Washington; The Mexican Army Medical Department and its School of Instruction, by Dr. Charles H. Alden, of Washington; Some Suggestions as to the Medical Department of the National Guard, by Dr. Gilbert I. Cullen, of Cincinnati; Venereal Disease in the Navy, and its Prevention, by Dr. R. Percy Crandall, of Norfolk, Virginia; On Military Medical Problems, by Dr. Alfred A. Woodhull, of Denver; The Hygiene of Enlisted Men, by Dr. G. C. Ashmun, of Cleveland; The Practical Disinfection of Ships of War, by Dr. J. C. Craig, of Brooklyn; Some Practical Points on Antisepsis in the Navy, Embracing Hygiene and Disinfection of Ships, Barracks, and Yards, with a View to Preventing the Importation of Germs of Disease and the Spread of Contagious Affections, by Dr. G. W. Woods, of Mare Island, California; Camp Sanitation in the National Guard, by Dr. James J. Erwin, of Cleveland; Some Remarks on Mountain Campaigning from a Medical Standpoint, by Dr. Henry P. Birmingham, of Fort Trumbull, Connecticut; Disability Discharge in the United States Army, by Dr. Dallas Bache, of Omaha, Nebraska; Identification, by Dr. George W. Adair, of Washington; Objections to the System of Identification in Use in the United States Army, by Dr. Paul R. Brown, of Fort Hamilton, New York; A Field Appliance for the Extempore Preparation of Hypodermic Solutions, by Dr. Henry McI. W. Moore, of Columbus, Ohio; The Use of Kola in Military Practice, by Dr. George H. Penrose, of Salt Lake City, Utah; Degeneration in Military Life, by Dr. Charles E. Woodruff, of Fort Sheridan, Illinois; Regimental Instruction in First Aid, by Dr. Rory Fletcher, of London; Personal Equipment for Field Service, by Dr. Henry R. Tilton, of St. Paul; First Aid on the Firing Line, by Dr. James J. Erwin, of Cleveland; The Radical Cure of Inguinal Hernia from the Standpoint of the Military Surgeon, by Dr. John M. Banister, of Fort Leavenworth, Kansas; Some Effects of Bullets, by Dr. Jefferson D. Griffith, of Kansas City, Missouri; On Fracture of the Lower Extremity of the Radius in its General and Military Aspects, by Dr. Lewis S. Pilcher, of Brooklyn; Slowly Absorbable Catgut by a Modification of the Benkisser Method, by Dr. W. C. Borden, of Fort Snelling, Minnesota; The Ambulant Treatment of Fractures, by Dr. Edward Martin, of Philadelphia; On the Management of Acute or Sudden Recurrent Appendicitis in Camp and in the Field, by Dr. M. O. Terry, of Utica, N. Y.; The Place of Military Medicine and Surgery in the Medical College Curriculum, by Dr. George M. Kober, of Washington; The Lines of Surgical Aid on the Battlefield, as Modified by Modern Military Conditions, by Dr. James E. Pilcher, of Columbus, Ohio; Military Sanitary Organization on the Lines of Communication and at the Base, by Dr. John Van Rensselaer Hoff, of Vancouver Barracks, Washington; A New Method of Lifting and Carrying a Patient by a Single Bearer, by Dr. Henry McI. W. Moore, of Columbus, Ohio; A Medical Chest Suitable for a Battery, Troop, or Independent Company, by Dr. Herbert A. Arnold, of Ardmore, Pennsylvania; The Physique of the American Soldier, by Dr. Henry S. Kilbourne, of Madison Barracks, New York; Physical Training in our Army and Navy, by Dr. Henry G. Beyer, of Washington; Physical Training in the National Guard, by Dr. William A. Westervelt, of Columbus, Ohio; What to Avoid in Army Athletics, by Dr. John S. Kulp, of Vancouver Barracks, Washington; and The Soldier as an Athlete, by Dr. Guy C. M. Godfrey, of St. Paul.

Two Cases of Black Tongue.—At a recent meeting of the Société anatomo-clinique de Lille, a report of which is published in the *Journal des sciences médicales de Lille* for May 1st, M. J. Lohéac related the histories of two patients who were the subjects of this peculiar affection. Black tongue, he said, was generally presented under the form of a patch of a more or less deep black color situated on the dorsal surface of the tongue. This patch was itself composed of villosities spreading in different directions, due to a proliferation of the epithelium which was hypertrophied lengthwise, under the influence of causes still unknown, and the epithelium at the same time became more refractive. A microscopical examination had shown the presence of various micro-organisms in the centre of these villosities, notably the leptothrix, also spores resembling those of the trichophyton, according to Magnin and Raynaud.

The ætiology of this strange disease was obscure. Authors had remarked, said M. Lohéac, and his two observations bore out the truth of this assertion, that it was developed preferably in old persons and in those who had been weakened by disease, particularly in those who suffered with digestive troubles.

The prognosis of this affection, he said, was very favorable. It was a purely local affection, having no remote results on the general health, and did not even disturb the functions of the tongue. If the affection was left to itself, the black color disappeared without leaving any traces after a time, by becoming progressively attenuated from the periphery toward the centre.

The treatment consisted essentially in scraping off the villosities, and generally one operation sufficed. Alkalines were indicated to combat the acidity of the mouth which was nearly always present in these cases.

The Alkaloids of the Solanaceæ.—The *Journal des praticiens* for May 1st contains an interesting article on the comparative merits of the alkaloids derived from the various plants of the family *Solanaceæ*. The toxicity of a large number of these plants, says M. Pouchet, is manifested by an elective action on the nervous system, and more frequently shows itself with extremely weak doses. According to the physiological properties of the *Solanaceæ*, says M. Pouchet, we may establish three types of toxicity, as follows: The genus atropa, the genus nicotiana, and the genus strychnos. To the second and third M. Pouchet does not devote much space, as he considers nicotine is not to be compared to atropine, and strychnine, he thinks, should be made the subject of a special study. He pays particular attention to the physiological action and chemical constitution of the alkaloids contained in belladonna, datura, hyoscyamus, mandragora, scopolia, and duboisia. Of these alkaloids, atropine is, in his opinion, the least dangerous, and consequently preferable in the practice of medicine.

The physiological action of atropine and atropidine is almost identical, whether they act on the nervous centres, the pneumogastric nerve, the secretory fibres of the chorda tympani, or the pupil. Atropidine is the most active; that is to say, a small amount of this substance will cause the appearance of symptoms that a larger dose of atropine would produce. Regnauld, says M. Pouchet, demonstrated that these two products were distinctly definite, and that it was possible to separate one from the other by making use of the different properties of their chloraurates. The chloraurate of atropine is presented in the form of dull-white crystals, and that of atropidine in brilliant yellow crystals.

An almost absolute proof of their identity lies in the fact that if these two substances are treated with sulphuric acid, they will give the same sulphate. Regnauld has, in fact, shown that their crystalline form is identical, and that both of them melt at the same temperature, 363° F. The author considers this of great importance because it renders possible a comparison of all medical treatment with the sulphate of atropine, whatever may be its origin. It also explains—what has not been observed in the employment of atropine sulphates of different productions—the irregularities, the uncertain action, and even the accidents which have been observed in the employment of hydriodide, hyoscine hydrobromide, scopolamine, etc.

M. Pouchet thinks that, in order to avoid accidents, it is absolutely indispensable not to use alkaloids which are of obscure origin, the chemical and physiological study of which is yet scarcely outlined. In his opinion, atropine and atropidine are the only absolutely definite products, and therefore preferable in the practice of medicine.

M. Pouchet terminates his article with some advice regarding the manner of employing atropine, and recommends various solutions, the formulæ of which are given.

Measles and Whooping-cough.—In the May number of the *Revue mensuelle des maladies de l'enfance* M. Marcel Labbé has a long article on the association of measles and whooping-cough in infantile pathology, of which the following is the substance: In the children's hospitals, and during the course of epidemics, measles is frequently associated in the same subject with one of the other children's diseases, particularly with whooping-cough. In the service of M. Bergeron in one year the association of measles and whooping-cough had been observed thirteen times. The author had observed the same association ten times in the service of M. Hutinel at the Enfants-Assistés. These and other cases led the author to seek for the modifications which this association produced in the symptomatology, the progress, and the prognosis of each of these two affections.

The frequency of the association of these two diseases in children's hospitals may be explained, says the author, by the many chances of contagion to which the children are exposed. In private practice this association is much more rarely observed, although when these two diseases are epidemic at the same time in a city, cases of this kind are seen.

Measles and whooping-cough are considered to be two different infectious diseases, their ætiology and their evolution being absolutely distinct; the former never produces the latter, and *vice versa*. But these affections may occur simultaneously or successively in the same individual, and measles may give rise to a tracheo-bronchial adenopathy in which the cough simulates whooping-cough. The order of succession of the two diseases in the same subject varies.

Hirsch, in a large number of epidemics in which these diseases were associated, observed the simultaneous appearance of measles and whooping-cough thirty times, the latter following the former fourteen times and preceding it five times. According to Rilliet and Barthez, says the author, in the great majority of cases the whooping-cough succeeds the morbillous eruption. In much rarer cases the cough precedes the exanthema by one or more weeks; more rarely still, it shows itself at the same time with the prodromes. At other times whooping-cough is developed after the complete establishment and absolute disappearance for a month or two of the cough of measles.

Roger, on the contrary, observed that whooping-cough oftener preceded measles. In seventy-eight cases it preceded the latter disease thirty-one times, was simultaneous with it twenty-four times, and followed it twenty-one times. According to the author's observations, whooping-cough has preceded measles eight times, followed it six times, and been simultaneous with it twice.

The influence which these two diseases exercise one upon the other is marked by differences according to the time of their appearance. When they occur simultaneously they hardly modify each other, and their evolution is almost normal. The appearance of measles nearly always exercises an influence on the frequency and character of the paroxysms of whooping-cough, but this influence is very variable. According to Rilliet and Barthez, the attacks of coughing do not diminish in number, but change in character. The author cites other writers in regard to this influence, and states that in his case the attacks of coughing underwent the modifications pointed out by these writers; that they became more suffocating and duller, and that they produced a shock which remained after the attacks ceased.

If measles modifies the form and the number of the paroxysms, the whooping-cough manifests its action on the eruption of the former disease by giving to it an ecchymotic aspect. This peculiar aspect of the eruption may extend to the entire surface of the body or may be limited to certain regions, particularly to those in which the skin is fine, and where the eruption has been more intense. The spots may become confluent and may be accompanied by petechiæ and large ecchymoses which may affect the eyelids especially and the conjunctiva. On the following days the color becomes successively brown, a grayish-yellow, and a dirty yellow, and finally disappears after a fortnight.

When measles precedes whooping-cough the latter is ushered in by different symptoms, according to the period in which it appears. If it occurs during the first stage of measles, it does not change the aspect considerably, the febrile condition and the morbillous cough remain the same, and the eruption continues regularly, according to Roger. More frequently whooping-cough occurs toward the tenth or the fifteenth day after the extinction of the morbillous exanthema and of the fever. The cough and an elevation of temperature announce its appearance. This cough, which sometimes does not cease, becomes more frequent at night, more paroxysmal, and after several days assumes a convulsive character. Symptoms of bronchitis persist, and the temperature, which becomes normal on the third day of the eruption, rises again; at other times the fever does not abate, the temperature remaining at about 100.2° F.; frequently also it is completely absent. Finally, whooping-cough may occur still later; the author has seen it appear twenty-five days after the eruption of measles. In this case the fever had persisted for twenty days before the appearance of the attacks of coughing. Secondary whooping-cough does not present, from the point of view of its duration, any difference from the primary attack.

With regard to the prognosis, M. Labbé states that, according to the older writers and the different reports of epidemics, he is struck with the character of gravity which they seem to attribute to this association of diseases, but, he says, in the cases observed by him he saw nothing which would lead him to such a conclusion.

The American Gastro-enterological Association.—During the meeting of the American Medical Association a new association will be organized which will be known as the American Gastro-enterological Association, the members of which will consist of those who are especially interested in diseases of the digestive tract. At the first meeting, which will be held in Philadelphia on June 3d, the following papers will be read: Gastro-intestinal Diseases as a Specialty, by Dr. A. L. Benedict, of Buffalo; The Diagnosis of Gastric Carcinoma, and The Cause of the Digestion and Absorption of Rectal Nutritive Enemata, by Dr. J. C. Hemmeter, of Baltimore; The Chemistry of Foods and their Relation to the Chemistry of Digestion, by Dr. A. P. Buchman, of Fort Wayne, Indiana; Further Remarks on Erosions of the Stomach, by Dr. Max Einhorn, of New York; An Impacted Gallstone Simulating Cancer of the Pylorus, and Cancer of the Colon (near the Sigmoid Flexure), by Dr. Henry L. Elsner, of Syracuse, N. Y.; Stomach-washing in Infancy and Childhood, by Dr. Henry E. Tuley, of Louisville; The Relation of Hydrochloric-acid Secretion to Indicanuria, by Dr. Allen A. Jones, of Buffalo; Atrophy of the Stomach, with exhibition of the specimen, by Dr. Julius Friedenwald, of Baltimore; Some Indications and Contraindications for the Employment of Abdominal Massage in Diseases of the Stomach and Intestines, by Dr. Boardman Reed, of Philadelphia; Gastroenteritis Infantum, by Dr. H. Beck, of New York; and Gastric Disturbances Caused by Hernia of the Linea Alba in the Epigastrium, by Dr. Charles D. Aaron, of Detroit.

The Hot-air Treatment of Gout and Rheumatism was the subject of a paper presented by Dr. A. Graham Reed at a meeting of the Philadelphia County Medical Society held on April 28th. Dr. Reed said he had had constructed a copper cylinder having many advantages over those seen in the London hospitals. With this American apparatus he was able to apply and easily regulate hot dry air ranging as high as 320° F. and even higher, for from forty to sixty minutes, that being the time allowed for a single treatment. The temperature of the body in some cases remained normal or nearly so, and in others varied up to 100°. The pulse ranged from 80 to 104, the latter the highest he had yet seen.

The first effect was upon the peripheral circulation and the terminal nerve filaments in the skin. Under the stimulus of the hot air, the cutaneous blood-vessels first contracted and then relaxed, thus causing profuse diaphoresis. The circulation was enormously increased and the color of the skin became a vivid red. Pain and stiffness were greatly diminished and in time entirely relieved. The anodyne effect was very great at a temperature of 300° and upward. Many preferred it at that height as being so comfortable. When fibrous articular adhesions had formed, speedier relief was found by breaking them up under chloroform and then applying the heat. He had not yet seen any injurious effects from this treatment, but he had seen cripples give up their crutches and useless hands become useful. Pain and effusions had disappeared and even parts not directly treated had been in a measure relieved.

It was greatly a matter of patience and perseverance and intelligent appreciation on the part of the patient and of his or her proper management, attention to diet and daily habits, by the physician. Miracles must not be expected; Nature took time for her recuperative processes and the patient must be made to so understand.

The Fifth District Branch of the New York State Medical Association.—The thirteenth annual meeting will be held in Brooklyn on Tuesday, May 25th, under the presidency of Dr. Charles Phelps. Besides the president's address, the following papers will be read: The Treatment of Convergent Strabismus in Children, by Dr. L. A. W. Alleman, of Kings County; A Suggestion in the Treatment of Diabetes, by Dr. G. W. Murdock, of Putnam County; Medical Asepsis, a Preliminary Note, by Dr. T. J. McGillicuddy, of New York County; The Physician, his Personnel and how it Affects his Success, by Dr. T. J. Hillis, of New York County; and Procidentia Uteri, with Special Reference to its Treatment, by Dr. Frederick H. Wiggin, of New York County.

The New York Academy of Medicine.—At the last regular meeting, on Thursday, May 20th, the order for the evening was as follows: The presentation of a portrait of Dr. D. B. St. John Roosa, on behalf of some of the fellows, by Dr. David Webster; and a paper by Dr. Alexander Lambert entitled A Report of Eight Hundred and Five Cases of Sunstroke occurring in New York in 1896, with a Statement of the Results of the Treatment, and a Discussion of the Pathology of the Disease, which was to be discussed by Dr. Ira Van Gieson, Dr. H. P. Loomis, Dr. L. A. Conner, Dr. J. P. Thornley, Dr. L. F. Bishop, and others.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 26th inst., Dr. T. J. Harris will read a paper on The Relation of Rhinitis Atrophica Fœtidans to Diseases of the Accessory Sinuses. Patients will be presented, and specimens and apparatus will be exhibited.

At the next meeting of the Section in Gynæcology and Obstetrics, on Thursday evening, the 27th inst., the following papers will be read; Symphysiotomy, by Dr. Edward A. Ayres (to be discussed by Dr. W. Gill Wylie, Dr. William M. Polk, Dr. W. T. Lusk, Dr. J. Clifton Edgar, Dr. A. B. Tucker, and others); and Results from the Administration of Iron in a Readily Assimilated Form after Gynæcological Operations, by Dr. C. A. Von Ramdohr (to be discussed by Dr. H. P. Loomis, Dr. H. J. Boldt, Dr. W. H. Porter, Dr. George M. Edebohls, Dr. J. R. Nilsen, Dr. Carl Beck, Dr. S. Marx, Dr. J. O. Polak, Dr. George Lindenmeyer, and others). Cases will be reported, and instruments and specimens will be exhibited.

At the next meeting of the Section in Neurology, on Friday evening, the 28th inst., the following papers will be read: A Brief Survey of Paranoia, with Special Reference to the Disease in Women, by Dr. William Elliott Dold; and A Report of Two Cases of Paranoia, by Dr. Albert Warren Ferris (to be discussed by Dr. Frederick Peterson, Dr. George Alfred Lawrence, Dr. Carlos F. MacDonald, Dr. Emmet C. Dent, Dr. J. Arthur Booth, and others).

Original Communications.

FLAT-FOOT: ITS CAUSES AND TREATMENT.*

By NEWTON M. SHAFFER, M. D.,
SURGEON IN CHIEF, NEW YORK ORTHOPÆDIC DISPENSARY AND HOSPITAL.

IN order to present the results of my studies in flat-foot in the briefest manner I will call your attention to Fig. 1.

In it I have attempted to convey schematically that which may be easily demonstrated with the recently prepared anatomical subject, or upon the skeleton—namely, the action of the flexors and extensors upon the ankle joint, the tarsus, and the plantar tissues; the axis of motion at the ankle joint, with the arcs of motion about this axis of the heel, the superior articulating surface of the astragalus, the medio-tarsal joint,† and the distal end of the metatarsal bones.

In this diagram (Fig. 1) A represents the tibia and fibula; B, the knee joint; C, the origin of the gastrocnemius muscle at the femur; D, the gastrocnemius, soleus, and plantaris; and E, their insertion at the os calcis. In front, B represents the origin of the flexors of the ankle; F, the flexor muscles; and G, their insertion at the tarsus. H represents the plantar tissues.

No attempt is made to show the lateral muscles, for their action upon the ankle-joint centre of motion is very limited, and they play no important part in the causation of flat-foot.

Having described the various parts which are schematically apparent in the diagram, I will now call attention to the mechanism.

The point I represents the transverse axis of motion at the ankle joint. This transverse axis passes through the astragalus at a point just below the external malleolus. The curved line K′ K represents the superior articulating surface of the astragalus, over which the tibia and fibula ride. The centre of motion of this curve is at I. The curved line R′ R represents the arc of motion of the distal end of the os calcis, as it moves around the centre I. The curved line M′ M shows the arc of the head of the astragalus on the centre I; and the curved line T′ T at the distal end of the first metatarsal bone shows the arc of the anterior part of the foot. Its centre is traced to same point I, around which all important ankle-joint movements must occur.

The sole of the foot—*i. e.*, its outer border—is represented in all these diagrams at ninety degrees with the long axis of the tibia. If the post-tibial extensors (D) are shortened, the heel (E) is drawn up, as shown by the curved line E, R, the superior articulating surface of the astragalus follows the curved line K, and the medio-tarsal joint—at least the astragalo-scaphoid part—follows the curved line M. Following the diagram forward to the point S (the metatarso-phalangeal articulation), this articulation would follow the curved line T. If there were no medio-tarsal joint at L, S would move on the same centre, I, only movement here is modified by this joint L, as will be shown in another diagram.

The one thing which is the principal stay of the arch formed in the foot, and which controls the relation of G to E (the heel and the metatarsus), is the plantar fascia—the bowstring H. This bowstring is tightened when the flexors are shortened, or when the weight of the body is thrown on the foot anterior to the medio-tarsal joint. It is simply made taut by the action of the flexors. The strain upon it is more severe when it is called upon to bear the weight of the body with shortened extensors.

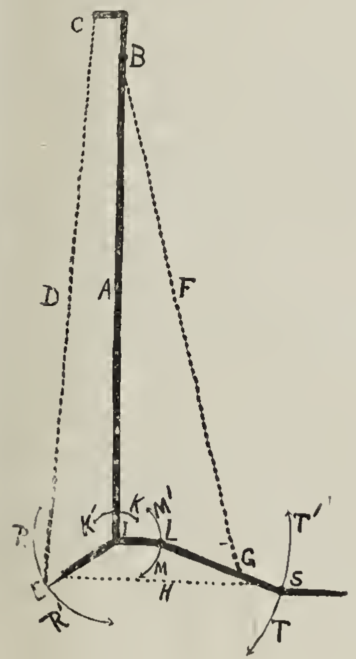


FIG. 1.

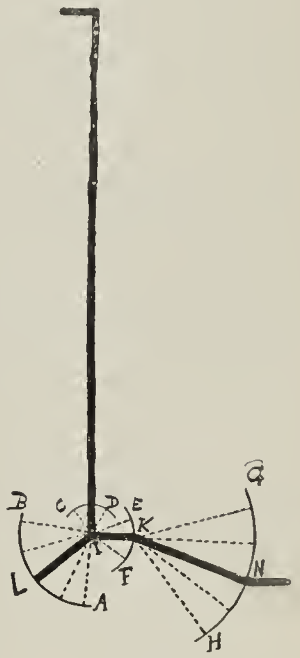


FIG. 2.

In Fig. 2 the same principles are more concisely shown. I again represents the transverse axis of motion at the ankle joints. The curved line B A is the arc of motion of the os calcis; C D the arc of motion of the superior articulating surface of the astragalus, and E F the arc of motion of the head of the astragalus. These curves all have one common centre, I, but each has a radius of different length. In this diagram the movement of the foot anterior to the medio-tarsal joint is shown. The dotted lines K G and K H show the radii of this arc, motion occurring at the medio-tarsal joint K upon the curved line H G until motion is blocked by the plantar tissues, when the centre of motion is transferred to the centre I, as is shown in diagram No. 1.

There are only two important centres of antero-posterior motion in the human foot—viz., I at the ankle and K at the medio-tarsal joint. The centre K is situated between the centre I and the distal part of the foot. The weak point of the structure is not at I, for it lies strongly protected in the dense structure of the astragalus, and it can only be disturbed by a force that would rupture or stretch the ligaments binding the os calcis and astragalus together, whereas K is protected only by the plantar bowstring H (Fig. 1). The os calcis and astragalus form, in effect, one bone, very slight motion only occurring between them. There is no weak point in its structure. Motion occurs upon the three remote arcs mentioned, and there is no joint at the axis of motion.

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* The substance of the following remarks was made by the author of this paper at the first meeting of the American Orthopædic Association, held in New York in June, 1887. The essay itself was read at a meeting of the Orthopædic Section of the New York Academy of Medicine, held February 17, 1893, and repeated at the meeting of the American Orthopædic Association, held in St. Louis the same year.

† In order to avoid confusion and multiplicity of words, the phrase "medio-tarsal joint" in this paper will include all the articulations of the tarsus anterior to the astragalo-scaphoid and os calcis-cuboid articulations.

If force is applied at L (Fig. 2), either in flexion or extension, it passes around the remote arc, C D, and is lost first at E K F, and when motion is checked at K it is then found at G N H. Extension of the ankle at L B would produce K F, and if there were no plantar check, K F would form a very considerable arc of motion. If H (Fig. 1) be for any cause weak or imperfect in its function of protecting the medio-tarsal joint K, motion at G H is very materially increased, especially in the direction N G.

In Fig. 3 the principle is shown more fully, and is applied more exactly to show the effect of the weight of the body upon the plantar tissues in locomotion.

If A, the distal part of the first metatarsal bone, is placed upon the fixed point B, and the gastrocnemius D is shortened in the direction of the arrow, the heel moves toward R, the superior articulating surface of the astragalus moves toward K, and the head of the astragalus moves toward M. After the movement at L is checked by the plantar tissues H, this bowstring is stretched, as shown by the arrows in its course. If H is strong enough to resist the force applied, the inner border of the foot does not reach the floor.

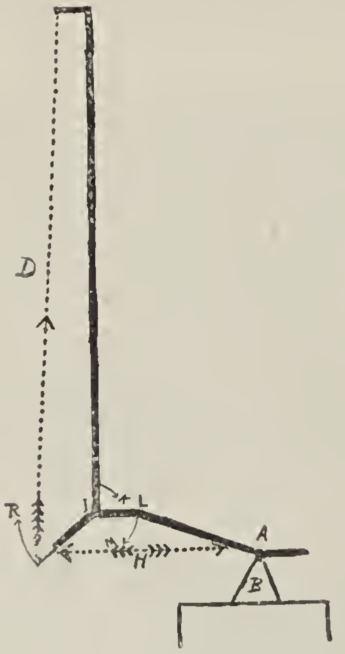


FIG. 3.

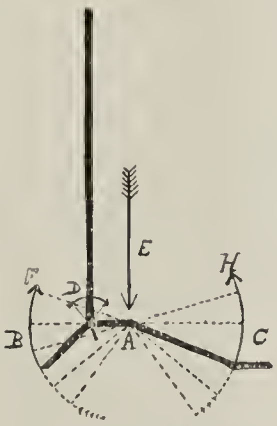


FIG. 4.

In Fig. 4 this proposition is still more simplified. We will suppose motion to have occurred at the ankle centre, I, until the plantar bowstring has reached its limit, and that the anterior portion of the foot is resting upon a fixed point, as in Fig. 3. Motion then occurs around the centre A (the medio-tarsal joint), and the weight of the body falls upon this joint in the direction of the arrow E.

I do not think that any one who has studied the mechanism of the human foot closely will dispute the correctness of these demonstrations, and without them a study of flat-foot would be incomplete.

There is no lateral movement at the normal ankle joint, unless, perhaps, there may be some slight movement in this direction in extreme extension of the ankle joint. Whatever purely lateral movement occurs is found anterior to the distal articulating surfaces of the astragalus and os calcis.

The lateral movement of the anterior part of the tarsus is controlled largely by the peroneus longus and peroneus brevis, and by the tibialis posticus. We should not need to consider these muscles in a study of flat-foot were it not that they are also feeble extensors of the ankle joint; for it can only be the extensors that can raise the heel and produce the effect shown in the diagrams. The tibialis posticus may be dismissed from our minds, as its action is to adduct the anterior part of the tarsus, and it is the legitimate antagonist of the two peronei whose function is to abduct the same part. I do not think it is possible for the unaided action of the two peronei to produce flat-foot any more than the flexors could produce this effect. Under the influence of a tarsal (osseous) inflammation the peronei may assume a certain re-enforced function, as represented by a condition of reflex muscular spasm, and thus abduct the anterior part of the tarsus. But the cause of the increased action of the abductors would be the inflammation. And I might as well say here that the so-called inflammatory flat-foot, with reflex spasm of the peroneal abductors, always represents an advanced stage of flat-foot after a long-continued use of the overstretched plantar tissues has produced a traumatic osteitis in the tarsus. We must look farther and deeper for the cause of flat-foot than the conditions found in advanced cases. We must try not to mistake effect for cause in our investigations.

If the ankle joint were like the knee, hip, shoulder, or elbow, we should not have such a condition as flat-foot. In these major articulations all the movements of the joint are represented by a simple lever, with the fulcrum at the joint. The force of the constantly applied muscular antagonism in walking, as well as the weight of the body at the hip and knee, is directly expended on the articulation used. But between the insertion of the flexors and extensors of the ankle there is a series of joints inserted (represented in the paper by the phrase medio-tarsal joint) with a protecting band (the plantar tissues), and it is at these points—the medio-tarsal joint and the plantar bowstring—that we must look not so much for the cause of flat-foot, as for the effects of the peculiar and complicated mechanism which makes flat-foot possible.

The plantar bowstring is at once the weakest and strongest part of the foot. With all the force that has been applied to it in the many accidents that have befallen the ankle and tarsus, the plantar fascia is not likely to rupture like the tendo Achillis. On the other hand, if exposed to a long-continued strain, under certain favoring conditions, it is very apt to elongate. Still, again, if the normal use of the plantar tissues is neglected for any cause, they will shorten and become very dense and hard. It is important to remember that this plantar bowstring may be lengthened if necessary, just as it may be made shorter if given prolonged rest under favorable conditions.

The normal balance between the flexors and extensors of the ankle joint and the abductors and adductors of the anterior part of the tarsus in the normal foot is usually well preserved. The balance between the post-tibial muscles and the plantar tissues is also generally not disturbed by ordinary circumstances. The balance between the flexors and the plantar tissues is never disturbed by the unaided flexors themselves—any more than it could be by the unaided action of the lateral muscles. The weight of the body in standing or in locomotion must be added to the flexor action, or the peronei must be aided by the instinctive muscular spasm before any pronounced effect can be looked for at the plantar bowstring; and first, and before all, there must be some block to the antero-posterior ankle-joint motion in the direction of flexion before any decided effect can be found at the plantar bands.

If, however, the normal antero-posterior motion at the ankle joint is disturbed, certain results are very sure to follow. If the flexors are paralyzed, as in poliomyelitis anterior, the post-tibial muscles shorten, and they may shorten so much that the normal use of the plantar fascia is modified or abrogated. The plantar fascia then becomes in effect a continuation of the gastrocnemius, and being unopposed by the normal antagonism of the flexors, and being deprived of its normal use in locomotion, it shortens. If the peronei are paralyzed also, we have a marked shortening of the plantar bowstring, and equinovarus results. If the tibialis posticus is paralyzed, we have ultimately an equino-valgus (an exaggerated flat-foot), with lengthened plantar tissues and an abduction of the foot, which in the end becomes a flat-foot. If the post-tibial muscles are paralyzed, the heel is drawn forward into the calcaneus position. The unimpaired plantar muscles and tissues now become a prolongation, so to speak, of the contracting flexors. The os calcis is drawn forward beyond its normal position, the plantar tissues shorten very much, and calcaneo-cavus results. A condition which is exactly the reverse of flat-foot now occurs.

When the heel is raised to any considerable extent, as in equinus, the weight of the body is transmitted, in walking or standing, through the ankle, tarsus, and metatarsus, in a line which, in extreme cases, approximates the long diameter of the tibia, as is shown in Fig. 5. A A represents the foot at ninety degrees with the tibia; B B, the foot in extension. The dotted line H represents the plantar tissues in the ninety-degree position, while the line N shows the plantar tissues in the extended position. K shows the force transmitted through H and N, the former forming a right angle with H, the latter an obtuse angle, anterior to the medio-tarsal joint. The strain is much greater in the position A than B, and the extended lines A′ B′ show the direction of the metatarsal bones and their relation to the long diameter of the tibia. The strain upon the plantar tissues is very much modified when extension occurs beyond a certain point. Hence, when the heel is raised to a considerable extent, flat-foot is not likely to occur; on the contrary, the plantar tissues are likely to become shorter, as the normal strain of locomotion upon them is modified. When the post-tibial tissues are shortened only slightly, as in non-deforming clubfoot, and the plantar tissues are normally strong, flat-foot is not likely to occur. In non-deforming clubfoot, the tarsus is, as a rule, protected by the tibialis posticus, and the weight falls on the outer border of the foot. Non-deforming clubfoot generally presents a dense and shortened plantar fascia, and its cause is probably some remote trophic central lesion accompanied by the reflex irritability which Sayre has pointed out. Not a few of these conditions result in flat-foot, however, and they are most frequently seen associated with cases of rotary lateral curvature in young and growing girls. Nature can stretch the tissues that Sayre's dogma says we must divide. On the other hand, if we have a slightly shortened gastrocnemius with weak and flabby fibrous and muscular tissues at the plantar arch, it is only a question of time as to when the bowstring will yield and flat-foot result. If the weight of the body falls squarely on the astragalus, with normal antero-posterior motion around the astragalar curve, there can be no undue strain upon the plantar tissues in locomotion. The weight of the body is diffused around the astragalar curve, and there is no shock or strain upon the plantar bowstring.

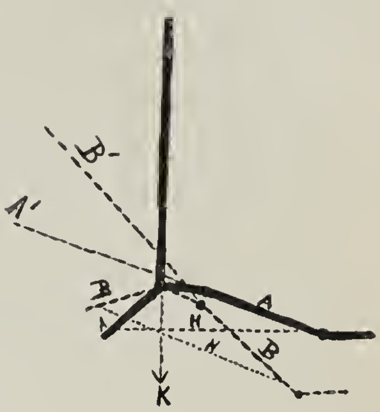


Fig. 5.

Let us suppose that we have a shortened gastrocnemius muscle in a weak or poorly nourished and rapidly growing adolescent. The heel can not quite come down and thus allow antero-posterior motion at the ankle around the astragalar arc. The weight of the body is not sufficient to overcome the post-tibial resistance. The anterior tibial (flexor) muscles are not strong enough to remove it. The lateral muscles are feeble extensors. They would assist rather than retard the stronger extensors. But still the patient walks, and perhaps must walk, or, worse still, stand for a prolonged period to earn his living. The plantar bowstring can not withstand the constant strain. The foot and ankle structures do as other structures do when exposed to a prolonged strain—viz., they yield at the weakest point. In brief, since motion can not occur at the transverse ankle centre of motion, the plantar tissues yield, and vicarious motion occurs at the medio-tarsal joint.

As the plantar tissues yield to the shortened extensors and the superincumbent weight of the body, the inner border of the foot becomes longer, the medio-tarsal joint on its scaphoid side falls, and the anterior part of the tarsus passes necessarily into abduction.

If the scaphoid drops until it finds a natural resting place on the floor in walking, what occurs to the astragalus and os calcis? These two bones are practically one, and unless the ligamentous connection between them is disturbed the os calcis must go up as the astragalus moves down. The shortened gastrocnemius gets shorter, the plantar fascia becomes stretched to its fullest extent, until finally we have a fully developed flat-foot.

If there were normal antero-posterior motion at the ankle centre, the plantar tissues could not suffer. With normal motion here the weight of the body would be diffused about the astragalar curve—not lost on the more remote tissues at the sole of the foot. If there were a joint at the transverse axis of the ankle, as there is at the medio-tarsal transverse axis, we might have a yielding at the ankle centre of motion. But while the astragalus moves downward, and the os calcis moves upward, the reverse movement being limited by the shortened post-tibial group, there is no transverse joint in either the os calcis or astragalus, and motion here occurs upon a remote arc (C D, Fig. 2).

It would seem comparatively easy to demonstrate flexion of the ankle in flat-foot. But it is not so easy as it seems. In making the examination and in applying tests it must be borne in mind that the usual bases of measurement are no longer present. The medio-tarsal joint is lowered, the plantar tissues are elongated, the "ball of the foot" is gone, and the inner border of the foot is lengthened. There is a greatly increased movement at the medio-tarsal joint, and the anterior part of the tarsus is abducted. It is impossible to restore these parts to their normal relation to make a normal test. Even if the anterior part of the foot seems to pass a point that indicates an approximately normal flexion, the heel does not come down with the movement upon the ankle centre. Vicarious movement occurs at the medio-tarsal joint.

In the early stages of the condition the abduction may be easily overcome, because then there is no reflex spasm of the peronei. When there is reflex spasm present, it is impossible to place the foot in a position to test flexion of the ankle.

The only way to approximate the normal condition is to first overcome the abduction of the anterior part of the tarsus. Then attempt to restore the arch by manual pressure and support with a relaxed gastrocnemius. See that the knee is in full extension and that the entire tarsus falls directly under and in normal line with the long diameter of the tibia. Then gradually and slowly flex the ankle, making the pressure as near the medio-tarsal joint as possible, so as to avoid using the vicarious medio-tarsal motion; and, finally, having done all this, use the outer border of the foot as a plane of measurement. Bear in mind that we are testing antero-posterior motion at the ankle, not at the medio-tarsal joint.

If these precautions are properly applied, it will be seen that very imperfect flexion occurs at the ankle centre of motion; and even if an apparently slight flexion is found, it does not follow that it is a true flexion at the ankle. The os calcis can not be brought down, and the altered relation of the tarsal bones to each other makes an artificial rather than a real flexion.

I do not pretend to say that a shortened gastrocnemius is the only cause of flat-foot, any more than I would claim that tuberculosis was the only cause of chronic inflammation at the hip joint. But I do say that it is a very frequent, and indeed the most frequent, cause of flat-foot, and, so far as I know, it is a hitherto unrecognized cause. And I may even say that among the hundreds of cases that I have examined during the past eight or ten years, I do not recall over three or four instances where I could not satisfy myself that the tendo Achillis was tense and unyielding when flexion was attempted beyond ninety degrees. Frequently it would be something more than ninety degrees, and in the exceptional cases referred to flexion would stop at little less than ninety degrees—say, eighty-nine or eighty-eight degrees —but always far less than true normal flexion. If flexion stops at ninety-five degrees, I should not expect to find flat-foot. I would rather expect to find shortened plantar tissues with adduction of the foot. I have followed a large number of flat-foot cases, as we all do in dispensary work, and I am convinced that the peroneal shortening is secondary to the gastrocnemius shortening; and I am satisfied from clinical observation that the spasm of the peronei is due to an osteitis located in the tarsus and caused by prolonged traumatism.

One can easily imagine that a sufficient degree of direct traumatism may be inflicted upon the tarsus to cause a flat foot, or that hereditary causes may predispose one to acquire it easily and from slight causes, or that a peculiar gait arising from causes operating from above—*i. e.*, knock-knee, etc.—might occasion flat-foot. All these causes, however, are exceptional. The flat-foot I am attempting to describe is the classical flat-foot, where none of the exceptional causes are present, and where almost uniformly the conditions I have attempted to describe are found.

The conditions in non-deforming clubfoot vary from those found in flat-foot largely and almost only in the plantar and tarsal conditions. In non-deforming clubfoot the plantar tissues may successfully resist the influences which produce a relaxation in the other class of cases. I have seen typical cases of non-deforming clubfoot become typical cases of flat-foot. At twelve or thirteen, in young girls, the non-deforming clubfoot (frequently associated with true lateral curvature and muscular eye troubles) was present. At sixteen or eighteen flat-foot had developed.

If we further study the various ankle-joint conditions we may find confirmation of the views here expressed. The retraction of the gastrocnemius muscle after Hey's or Chopart's operation, and, indeed, in any amputation which removes the foot anterior to the medio-tarsal joint, but which leaves the lateral muscles attached to the stump, may be taken as illustrations of the action of the post-tibial muscles in producing flat-foot. In ankylosis of the ankle joint after chronic inflammation, where no motion occurs at the transverse axis of motion, flat-foot does not occur. Indeed, it can not occur. If all motion is prevented at the astragalar curve, it can not occur at the os calcis or at the medio-tarsal joint. The conditions in paralysis of the leg have already been referred to. Indeed, it is hard to imagine a condition of flat-foot with a paralyzed or elongated gastrocnemius, just as it is an easy matter to demonstrate that a shortened gastrocnemius is essential to its production.

And yet flat-foot is very common, much more so than is generally supposed. Many persons go through life with a slight form of it and complain a good deal and consult their shoemaker and chiropodist, but rarely go to their medical attendant for advice. And even if they do, the patient is very likely to be referred back to his shoemaker or an instrument-maker, who fails either to recognize the trouble or to relieve it.

The cure of flat-foot would be easily accomplished if one could temporarily paralyze all the extensors of the ankle joint, and wait for the slow process of plantar tissue shortening that occurs when the gastrocnemius is paralyzed in poliomyelitis anterior.

This, of course, is impossible. But we may imitate Nature and follow her methods as closely as possible. We might divide the tendo Achillis, as we would in a more marked case of equinus, and, if necessary, supplement this by the division of the peronei and tibialis anticus. This would enable one to crowd the os calcis forward and thus raise the depressed astragalar neck. The plantar tissues would relax under this procedure, and the parts could be approximately restored to their normal position, and held there by apparatus that would adduct the foot, thus imitating the action of the tibialis posticus. This adduction of the foot should be kept up for a period of weeks in the recumbent position and then followed by the use of an ankle support that would accomplish the same end.

Or we might stretch forcibly, under ether, the gastrocnemius and the peronei, and overcome the deformity even to the extent of supercorrection (an operation which I performed as long ago as in 1873) and maintain adduction for as long a period as necessary in apparatus. It is apparent to me that in practising this procedure I have unwittingly elongated the gastrocnemius in my efforts to overcome the more feeble extensor contraction at the peronei. Certainly in old and confirmed cases this would seem to be the better plan, especially among the poorer classes, where time is of value to the patient—although I have successfully relieved quite a number of adult and confirmed cases by a simpler and, it seems to me, more rational proceeding, which does not require etherization, and which permits the patient to pursue his daily occupation.

The first point of attack is the shortened gastrocnemius—for whether it is admitted or not that this muscle is shortened, all will agree, I think, that it will do no harm to bring the heel downward and forward toward the distal end of the elongated plantar tissues.

The original traction shoe stretched the plantar tissues as well as the gastrocnemius. This, of course, contraindicated its use in flat-foot. Recent experiments with it have enabled me to obviate the plantar-fascia stretching, and I have obtained many excellent results by its use.

One essential modification consists of a curved plate made to fit the normal plantar arch. This plate slides backward and forward upon the foot piece of the apparatus, and can be adjusted to any desired position. The other modification consists of a transverse worm and screw placed in the traction rod and just anterior to the point where it leaves its sheath. By using this worm and screw the anterior part of the foot-plate can be thrown downward away from the tarsus and metatarsus, while the part immediately under the medio-tarsal joint is pushed up. By using the key which brings the heel part of the apparatus downward and forward, and then applying the upward pressure of the plantar plate, the heel is drawn downward and forward and the neck of the astragalus is thrown upward and backward, following the curved lines B L A and F K E in Diagram No. 3. By this apparatus a firm hold is obtained upon the os calcis and astragalus.

And so every day, for a few moments, the os calcis is pulled downward and forward, and the astragalus is pushed upward and backward, and after using the stretcher an ankle support is applied which causes the patient to walk on the outer border of the foot, not by building up the sole of the shoe, for this is a fallacy, but by so constructing the ankle piece of the ankle support that it is lower on the outside than on the inside. This forms an unyielding support which does not adapt itself to the outline of the foot as any leather shoe will sooner or later do.

At night a simple apparatus is worn which holds the heel down, and which also adducts the foot, so that both night and day the plantar tissues are receiving physiological rest.

The ankle support has been used quite extensively in the New York Orthopædic Dispensary and Hospital without the stretcher, and many good results as to relief from pain, ability to walk and work, are reported.

28 East Thirty-eighth Street.

A REPORT UPON

SOME MICROSCOPICAL ORGANISMS FOUND IN THE NEW YORK CITY WATER SUPPLY.

By SMITH ELY JELLIFFE, A. B., M. D.,

AND KARL M. VOGEL, PH. G.

DURING the years 1892–'93 one of the writers made an extended microscopical analysis of the Brooklyn water supply, the results of which were published with tables and illustrations in the *Brooklyn Medical Journal* for October, 1893, and October, 1894.

The following series of observations, along much the same lines, was begun upon the New York water in May, 1894, but for various reasons was carried on in an irregular manner; the results have, however, been included in the tabulations for the sake of future reference. From about the middle of November, 1895, the observations were made weekly upon the water delivered from the tap in the writer's residence, 231 West Seventy-first Street, New York.

The same two methods were employed as in the Brooklyn water research. The Sedgwick-Rafter method was used as a means of control, while the writer's method of filtering through absorbent cotton for a definite length of time and consequent shaking out of the organisms was employed as a regular routine. Specimens were subsequently preserved in two-per-cent. formaldehyde for future study or corroboration.

Previous to the monumental work of the Massachusetts State Board of Health upon the water supplies of that State, there had been reported more observations upon the water supply of New York city than of any other city supply in this country; yet these reports were but fragmentary. Other cities in the Union were fortunate in having enthusiastic microscopists who devoted much time to the examination of their local water supplies; such men were Messrs. Vorce, Rafter, Thomas, Mills, Kellicott, and others. A full record of the work, whether fragmentary or exhaustive, that had been published up to that time may be seen by referring to the bibliography in the *Brooklyn Medical Journal*, October, 1894, p. 597 *et seq.*

Regarding the organisms of the New York water supply, that well-known and beloved botanist, Dr. John Torrey, was the first to publish anything upon the subject. In the annual Report of the Croton Aqueduct Commission for 1859 he draws attention to the fact that at many times of the year a peculiar odor in the water was noted, which he compared to the odor of an old hydrant; this odor he believed to be due to vegetable organisms, one of which he described as a "small string of oblong, rounded cells with larger ones interspersed" (like a string of beads). This form is to-day recognized from Torrey's description as an "anabæna," and is now definitely held to be the cause of unpleasant odors and tastes in drinking waters. He also described a form of nostoc which has a similar unsavory reputation.

In 1869 two writers published some notes upon the subject—W. B. Lewis, M. D., and Fred. Kitton. The former, in a report to the Metropolitan Board of Health, gives a list of some species with some fifty figures, which were well executed. The forms drawn by him are quite common at the present time; a point of historical as well as of sanitary interest. Kitton's observations were restricted to the diatoms. Many of the forms described by him are common at the present day, while others have not been observed by the writers.

C. F. Gissler, in *Contributions to the Fauna of New York Croton Water*, embodied the observations of about two years—1870, 1871—upon the animal forms. Gissler's pamphlet is now quite rare, is full of interesting and scientific observations, and is well illustrated. Most of the organisms found by him are to be found at the present time; some are very common, while others are very rare. His list includes, of the animal organisms, at least one half of those noted by the writers.

During a space of some ten to fifteen years or more, E. Waller, in the yearly reports of the board of health, doles out a series of figures on the chemical composition of the water. In his report for 1876–'77 he makes brief mention of the fact that the cause of the disagreeable odors that were present in the water in those years might be due to the presence of vegetable organisms. Cœlosphærium and anabæna are mentioned as particularly reprehensible.

R. Hitchcock, in the *American Monthly Microscopical Journal*, 1880, gives the best series of observations that up to this time had appeared. He makes the following interesting notes:

"*Croton Water in August.*—The Croton water that is now supplied to the city possesses no offensive taste or odor, although there is a considerable amount of suspended matter to be collected by filtering it. This is another fact tending to prove that the peculiar odor sometimes observed is caused by certain plants which are not always present, and not by the decomposition of vegetable matter of all kinds. We have lately studied the algæ found in a few filterings, and although the list is not complete it may still be of interest to observers in other cities."

Hitchcock's lists are the most valuable that we have for comparison and are here given as they stand, with such changes and omissions as a changing nomenclature permits.

Cyanophyceæ.—Dictyosphærium ehrenbergiana, Cœlosphærium dubium, Merismopedia glauca, Oscillaria tenuis, Oscillaria Froehlichii, Sphærozyga polysperma.

Chlorophyceæ.—Palmodactylon varium, Rhaphidium polymorphum, Chlorococcus gigas, Polyedrium Longispina, Scenedesmus caudatus, Pediastrum ehrenbergianum, Pediastrum biradiatum (?), Pediastrum pertusum, Gonium pectorale, Cosmarium crenulatum, *Cosmarium tetrophthalmum (?), Staurastrum lœve, Staurastrum Sebaldii, Staurastrum gracile, Micrasterias truncata, Spirogyra nitida.*

Numerous species of diatoms were found, but were not determined. Among other organisms were the following: *Amœba villosa, Difflugia globulosa, Difflugia corona, Arcella, Actinophrys sol, Ceratium, Brachionus Conium, Chœtonotus, Rotifer ova.*

A. M. Edwards, M. D., gives in the *Quarterly Journal of Microscopical Science* (1881 (?)) a brief list of some diatoms found.

Finally, in the *Medical Record* for 1882, E. Cutter, M. D., in an article upon Suspicious Organisms in the New York Water, gives a list of ninety-six organisms, most of which had been mentioned by previous writers; but, as this skilled microscopist includes in his list "skin of consumptive with yeast plants within," and figures a flat epithelial-like body with rounded masses included, we feel inclined to doubt his critical acumen. If the age and the sex of the afflicted person whose skin had found its way under the doctor's microscope had been given we might have deemed his lists more reliable.

The objects of the present examination were threefold:

1. To obtain an accurate knowledge of the microscopical (using the word in Professor Sedgwick's sense) forms that occur in the ordinary tap water, their kinds, comparative frequency, and seasonal distribution.

2. To ascertain whether any forms were to be found that are known or supposed to be obnoxious on account of their taste or odor, or prejudicial to the health of the community.

3. To observe whether there were any forms of living organisms or remains of dead ones that would indicate an unsanitary condition in the watershed.

Lists of tables have been prepared showing the various species of organisms that flourished naturally in the Croton water. Their comparative numbers are expressed as abundant (A.), common (C.), few (F.), or scarce (Sc.). Such terms are necessarily relative, but are sufficiently accurate, in the writers' opinion at least, to make the observations of value in correlating the results with other tabulations. The figures thus broadly indicated are as follows: Sc., one to five to the cubic centimetre and less; F., five to ten to the cubic centimetre; C., ten to twenty-five to the cubic centimetre; A., over twenty-five to the cubic centimetre.

Lists.—In all some hundred forms were found, of which about eighty-five were definitely determined. In general, it may be observed that there is a remarkable similarity in the organisms found when compared with those of the Brooklyn water supply, which fact would not appear at all strange were it not for the distinct differences in the geological formations of the respective watersheds. But, on the other hand, the forms observed are quite cosmopolitan, which again might readily bring the facts into correlation.

On going over the lists the fact of the constant presence of the class of algæ known as Cyanophyceæ is to be noted. It has frequently been stated that this class of organisms is an undesirable one in water supplies, indicating as they do within general limits a medium of growth which is rich in organic matter. Two representatives of the class were constant throughout the entire time of examination, Oscillaria and Clathrocystis.

In the class of organisms closely allied, the diatoms, there is little new to be noted. Cosmopolitan forms were in abundance, while there were a few species typical to the supply, *Cyclotella crotonensis* being a notable example. *Stephanodiscus Niagarœ* is a form that is common in the region of the great lakes, but we did not find it in the Brooklyn supply. In all some thirty-five forms were observed, of which the only ones of interest from the sanitary side were Synedra, Tabellaria, Melosira, and Asterionella. These organisms, presumably on account of the oil or fat found within their cytoplasm, are known to be responsible for distinct disagreeable tastes and odors when their numbers become excessive. The former three yield the "grassy" odors, while the last give a fishy and aromatic odor. These organisms have been quite constant throughout the entire time of examination, Synedra and Tabellaria have been few to scarce, while Asterionella and Melosira, during the month of December, were quite abundant. In the same time, 1896, Asterionella was rarer. This distribution is strikingly like the distribution of the same organisms in the Brooklyn supply and is probably associated with temperature changes. In point of number these organisms did not reach by one one-hundredth part the proportion necessary to make them noxious.

In the class of the Desmids fifteen forms were observed. This is a small list, but these forms are not common at this time of the year. The most constant forms have been Staurastrum and Closterium, but these have been very few in number at any one period of observation. Contrasted with the Brooklyn water there were fewer forms, and those present were scarcer. So far as is known these organisms are not deleterious in any way. It is stated that they can live only in pure water which has plenty of oxygen and sunlight.

Of the grass-green algæ, exclusive of the Desmids, two forms have been very commonly found, Scenedesmus and Rhaphidium, neither of which is of any hygienic importance.

Turning to the animal organisms, there were in all some thirty-five forms found in the period under consideration. Amœbæ were not found, but *Arcella vulgaris* and *Euglypha alveolata* were not infrequently observed.

The class of the Infusoria were not abundant. Dinobryon was the most constant. Its distribution was quite similar to that observed in the Brooklyn water. It increased during the months of January and February, while the other organisms gradually disappeared. Dinobryon is an organism which, in numbers of from five hun-

	1895. Nov. 1.	Nov. 8.	Nov. 15.	Nov. 22.	Nov. 29.	Dec. 6.	Dec. 13.	Dec. 20.	Dec. 27.	1896. Jan. 3.	Jan. 10.	Jan. 17.	Jan. 24.	Jan. 31.	Feb. 7.	Feb. 14.	Feb. 21.	Feb. 28.	March 6.	March 13.	March 20.	March 27.	April 3.	April 17.	April 24.	1895. May 1.	May 15.	June 1.	June 15.
VEGETABLE ORGANISMS.																													
Algæ, Cyanophyceæ.																													
Oscillaria Froehlichii	..	..	Sc	Sc.	Sc.	Sc.	Sc.	F.	F.	Sc.	..	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	..	..	..	Sc.	Sc.	Sc.
Gleocapsa, sp	Sc.	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anabæna, sp	Sc.	..	Sc.	Sc.	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..
Cœleosphærium, sp.	Sc.	..	F.	F.	Sc.	Sc.	Sc.	F.	F.	Sc.	Sc.	Sc.	Sc.	..	Sc.	..	Sc.	Sc.	..	Sc.	..	..	..	..	..	..	..	Sc.	..
Diatomaceæ.																													
Amphiprora ornata	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..
Amphora ovalis	..	..	Sc.	Sc.	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Asterionella formosa	C.	C.	C.	C.	A.	A.	A.	F.	F.	Sc.	C.	C.	Sc.	Sc.	Sc.	Sc.	Sc.	F.	Sc.	Sc.	Sc.	Sc.	F.	Sc.	..	..	Sc.	Sc.	Sc.
Cyclotella crotonensis	Sc.	Sc.	Sc.	Sc.	..	Sc.	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cocconeis pediculus	..	..	..	..	..	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	Sc.	..
Cymatopleura solea	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..
Cymbella cistula	..	..	Sc.	Sc.	Sc.	..	Sc.	..	..	Sc.	Sc.	Sc.	..	..	..	Sc.	..	..	..	Sc.	..	..	..	..	..	..	..	..	..
Encyonema ventricosa	Sc.	Sc.	..	..	Sc.	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	Sc.	..
Eunotia lunaris	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..
Fragillaria capucina	..	..	F.	Sc.	Sc.	Sc.	Sc.	Sc.	..	Sc.	Sc.	Sc.	..	..	..	..	..	Sc.	Sc.	..	Sc.	..	Sc.	Sc.	..	Sc.	Sc.	Sc.	Sc.
Gomphonema capitatum	..	..	..	Sc.	..	Sc.	..	Sc.	Sc.	..	Sc.	Sc.	..	..	..	Sc.	Sc.	..	..	..	Sc.	..	Sc.	..	..	..	..	..	..
Melosira granulata	C.	C.	C.	A.	A.	A.	A.	A.	F.	Sc.	C.	C.	Sc.	F.	F.	F.	C.	F.	F.	Sc.	Sc.	Sc.	C.	..	..	Sc.	Sc.	Sc.	Sc.
Navicula cuspidata	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" dilatata	..	..	..	Sc.	..	..	..	..	..	..	..	Sc.	Sc.	..	..	..	..	Sc.	..	Sc.	..	..	..	..	..	..	..	..	..
" gibba	..	..	Sc.	..	..	..	..	Sc.	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" radiosa	F.	Sc.	..	Sc.	..	Sc.	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	Sc.	Sc.	Sc.	..
" rhyncocephala	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..
" viridis	Sc.	..	..	..	..	..	..	..	Sc	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" sp. indet.	..	Sc.	..	Sc.	..	Sc.	..	..	..	..	Sc.	..	..	..	..	Sc.	..	Sc.	..	..	Sc.	Sc.	..	..	..	..	Sc.	..	..
Pleurosigma Spenceri	..	..	..	Sc.	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..
Stauroneis anceps	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..
Stephanodiscus minutus	..	..	..	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	Sc.	..	..
" Niagaræ	..	..	..	Sc.	Sc.	Sc.	Sc.	F.	F.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	..	Sc.	Sc.	Sc.	Sc.	..	..	..	Sc.	..	..	..	Sc.	..
Surirella elegans	..	..	Sc.	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..
Synedra pulchella	F.	F.	F.	A.	C.	C.	F.	F.	F.	Sc.	Sc.	F.	Sc.	Sc.	F.	F.	F.	..	F.	Sc.	Sc.	Sc.	Sc.	Sc	..	Sc.	Sc.	Sc.	Sc.
" ulna	F.	F.	C.	A.	C.	A.	C.	F.	F.	Sc.	F.	F.	F.	F.	F.	F.	C.	F.	C.	F.	..	F.	F.	Sc.	..	Sc.	Sc.	Sc.	Sc.
" biceps	..	..	..	..	Sc.	C.	..	..	..	..	..	Sc.	..	Sc.	..	..	Sc.	Sc.	Sc.	..	..	..	..	..	..	Sc.	Sc.	Sc.	..
Tabellaria fenestrata	Sc.	Sc.	..	Sc.	..	Sc.	Sc.	F.	F.	..	..	Sc.	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	Sc.	Sc.	..	..
" flocculosa	..	..	..	..	..	..	Sc.	Sc.	Sc.	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..
Chlorophyceæ.																													
Dictyosphærium Ehrenbergianum	Sc.	Sc.	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pandorina morum ?	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	Sc.	Sc.	..	Sc.
Pediastrum boryanum	Sc.	Sc.	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	Sc.	Sc.	Sc.
" Ehrenbergii	Sc.	Sc.	Sc.	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	Sc.	..	Sc.
" pertusum	Sc.	Sc.	Sc.	Sc.	Sc	Sc.	Sc.	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" Sturmii ?	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..
Polyedrium Longispina.	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rhaphidium polymorphum	Sc.	F.	Sc.	Sc.	Sc	Sc.	Sc.	Sc.	Sc.	..	Sc.	Sc.	Sc.	..	Sc	..	..	..	..	..	..	..	Sc.	..	..	Sc.	..	..	Sc.
Scenedesmus caudatus	C.	F.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	..	..	..	..	Sc.	Sc.	..	..	..	..	Sc.	..	..	Sc.	Sc.	Sc.	..
Spirogyra sp.	..	..	..	Sc.	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cœlastrum micoporum ?	F.	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..
Desmids.																													
Arthrodesmus incus	..	..	..	..	..	..	..	Sc.	Sc.	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Closterium Dianæ	..	..	Sc.	F.	Sc.	Sc.	Sc.	Sc.	Sc.	..	F.	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	Sc.	..	..
" ensis	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" rostratum	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..
Cosmarium Beckii ?	..	..	Sc.	Sc	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..
Desmidium aptogonium	Sc.	Sc.	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sphærozosma filiforme.	..	..	..	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..
Staurastrum crenulatum	C.	F.	Sc.	Sc.	Sc.	Sc.	..	..	Sc.	Sc.	..	..	Sc.	Sc.	..	Sc.	..	Sc.	Sc.	Sc.	Sc.	..	..	..	..	Sc	Sc.	..	Sc.
" gracile	..	Sc.	..	Sc.	..	..	Sc.	Sc.	Sc.	Sc.	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" polymorphum	..	..	..	Sc.	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	Sc.	..	..
Staurastrum sp	Sc.	..	..	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	Sc.	..
Vegetable Detritus.																													
Plant parenchyma	..	..	..	..	..	C.	..	..	F.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	Sc.	..	..
Ducts and tracheids	Sc.	Sc.	..	..	..	..	..	..	F.	Sc.	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	Sc.	..	Sc.	Sc.	..	..
Fibres	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Trichomes	..	..	..	Sc.	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	Sc.	Sc.	..	..
Spores, etc	Sc.	..	..	Sc.	..	..	..	..	Sc.	..	..	..	..	..	Sc.	..	..	..	..	..	..	Sc.	..	..	..	..	Sc.	..	..
ANIMAL ORGANISMS.																													
Rhizopods.																													
Actinophrys sol	Sc.	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Arcella vulgaris	Sc.	Sc.	Sc.	Sc.	..	..	..	..	..	Sc.	..	..	..	Sc.	..	..	..	..	..	..	..	..	Sc.	..	..	..	Sc.	..	Sc.
Difflugia sp.	..	..	..	Sc.	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Euglypha alveolata	Sc.	Sc.	Sc.	Sc.	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..
Infusoria.																													
Ceratium Hirundinella.	Sc.	..	Sc.	Sc.	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chilodon cucullatus	..	..	..	..	..	..	..	Sc	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coleps hirtus	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dinobryon Sertularia	Sc.	Sc.	Sc.	Sc.	Sc.	..	..	Sc.	Sc.	Sc.	..	..	..	..	C.	F.	F.	F.	Sc.	Sc.	Sc.	Sc.	Sc.	..	Sc.	..	Sc.	Sc.	Sc.

	1895. Nov. 1.	Nov. 8.	Nov. 15.	Nov. 22.	Nov. 29.	Dec. 6.	Dec. 13.	Dec. 20.	Dec. 27.	1896. Jan. 3.	Jan. 10.	Jan. 17.	Jan. 24.	Jan. 31.	Feb. 7.	Feb. 14.	Feb. 21.	Feb. 28.	March 6.	March 13.	March 20.	March 27.	April 3.	April 17.	April 21.	1895. May 1.	May 15.	June 1.	June 15.
Euglena viridis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..
" acus	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	Sc.	..	..	Sc.	F.	F.	Sc.	..	..	..	..	..	..
Gonium pectorale	..	..	..	..	..	..	..	Sc.	Sc	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	Sc.	..	..
Litonotus Fasciola	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..
Paramecium Bursaria	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Paramonas globosa	..	..	Sc.	..	..	..	..	Sc.	Sc.	..	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	Sc.	..	..
Piridinium tabulatum	..	..	..	..	..	Sc	..	Sc.	Sc	..	..	..	..	..	..	Sc.	..	..	..	..	Sc.	..	..	..	..	..	..	..	..
Phacus longicaudis	..	..	..	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	Sc.	Sc.	..
Pleuromonas jaculans	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	Sc.	..
Stylonichia sp	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..
Synura uvella	..	..	Sc.	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..
Trachelomonas sp	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" cylindrica	Sc.	..	Sc.	Sc.	..	Sc	..	..	..	..	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..
Vorticella communis	..	..	..	..	..	..	..	Sc.	Sc.	..	..	..	..	..	Sc.	..	..	..	..	..	..	Sc.	..	..	..	..	..	Sc.	..
Vermes.																													
Anguillula fluviatilis	..	Sc.	..	..	..	..	Sc.	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	Sc.	..
Rotifereæ.																													
Ancuria cochlearis	Sc.	Sc.	F.	Sc.	..	Sc.	Sc.	Sc.	Sc.	Sc.	..	Sc.	Sc.	..	..	..	Sc.	Sc.	Sc.	Sc.	..	..	Sc.	..	..	..	Sc.	Sc.	..
Rotifer vulgaris	..	..	..	..	..	..	F.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..
Monostyla lunaris	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Polyarthra platyptera	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..
Ova	F.	Sc.	..	Sc.	..	Sc.	..	..	Sc.	..	..	Sc.	..	Sc.	..	..	..	Sc.	..	..	..	..	Sc.	..	..	Sc.	Sc.	..	..
Crustacea.																													
Cyclops quadricornis	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	Sc.	..	..
Daphnia sp	..	..	Sc.	..	..	..	Sc.	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	Sc.	..	..	..	Sc.	..
Bosmina longirostris	Sc.	..	Sc.	..	..	..	..	Sc.	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Sc.	Sc.	Sc.	..
Miscellaneous.																													
Sponge spicules	Sc.	Sc.	..	Sc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Epithelium ?	..	..	..	Sc.	..	..	..	..	..	Sc	..	..	..	..	C.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hairs, etc.	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	..	..	..	..	..	..	Sc.	..	..	..	Sc.	..	Sc.	..	Sc.	..

dred to one thousand to the cubic centimetre, would produce a very disagreeable water. We have rarely seen it over fifty to the cubic centimetre during the time under consideration.

Of the remaining animal organisms there is little to be recorded beyond that found in the tabulations.

Finally, with reference to the detritus. This was made up for the most part of the tissues of higher plants and was not very abundant during the earlier months, but with the increased moisture of winter and the frequent thawing, etc., it became quite noticeable, especially in the early spring months, February 14th to April 3d. In a few instances the peculiar stone cells characteristic of straw were observed, and quite frequently cells characteristic of animal epithelium were found. Whether these were from "flesh, fish, or fowl" it would be unwise for us to hazard a diagnosis.

In conclusion, it would therefore seem that from the standpoint of the present examination the water is pure and wholesome. Its entire purity could alone be determined by the bacteriological analysis. Of this last class of work not enough has been done with our water supply. Many chemical examinations have been given us from time immemorial, and the New York City board of health weekly reports Complete Sanitary Analyses, which analyses are far from complete save in the chemical sense of the word. A good "complete sanitary analysis" of New York water has never yet been made, and it is a desideratum. This present communication is but a small step in the working out of such an analysis.

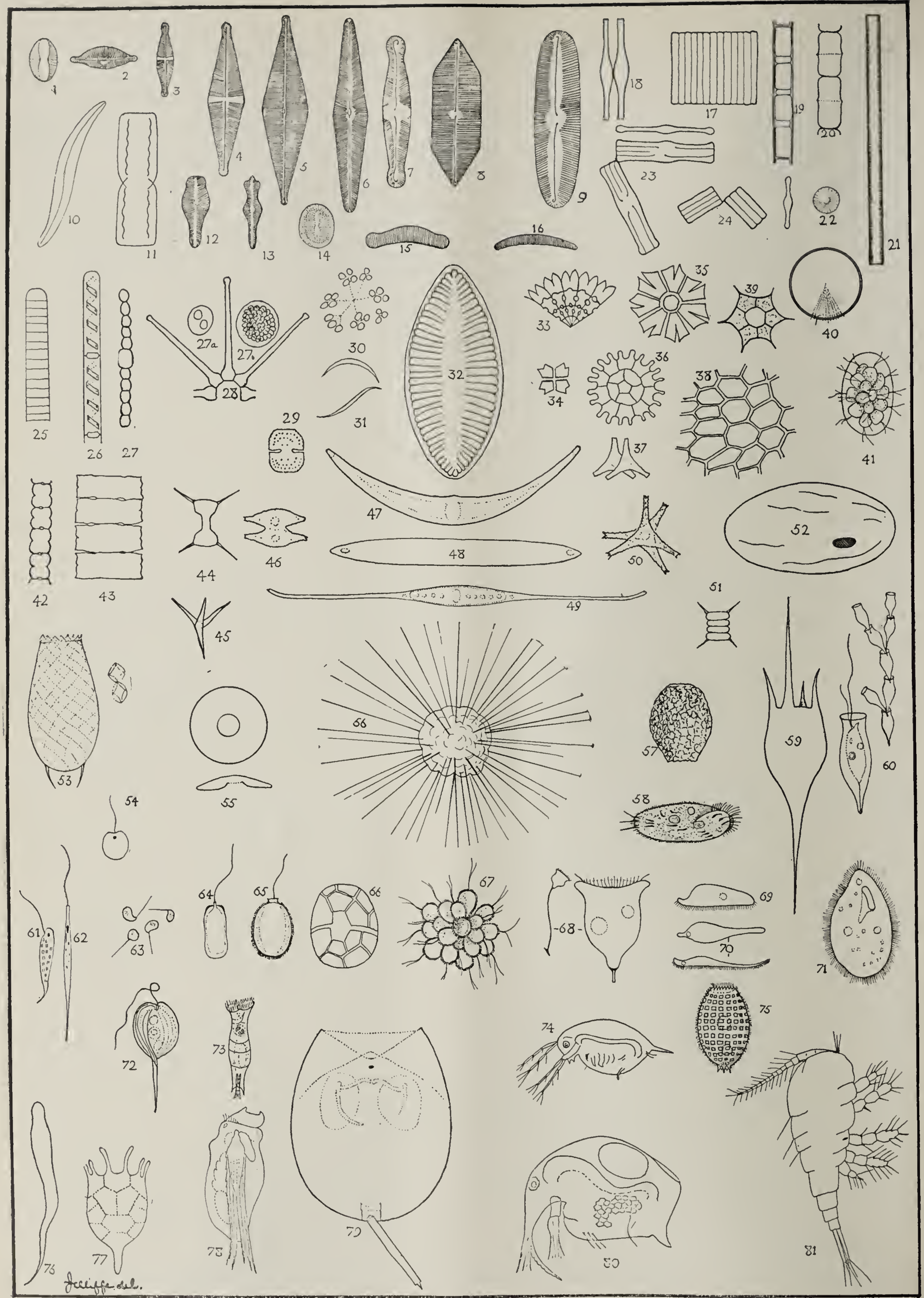
Appended is a chart of the more common forms observed during the period. For those interested it may be stated that the specific determinations were made by means of the best available monographs on the various groups: Bütschli, Kent, Hudson and Gosse, Potts, Leidy, Stokes, Wolle, Van Heurck, Wille, Rabenhorst, and others, being the writers mainly consulted.

In addition, some fifteen to twenty forms were observed which could not definitely be diagnosticated.

231 West Seventy-first Street, *December 28, 1896.*

EXPLANATION OF FIGURES.

1. Amphora ovalis Ktz.
2. Encyonema ventricosa Ktz.
3. Stauroneis anceps Ehr.
4. Stauroneis phœnicenteron Ehr.
5. Navicula cuspidata Ktz.
6. Navicula radiosa Ktz.
7. Navicula gibba (Ktz.) Ehr.
8. Navicula dilatata Ehr.
9. Navicula viridis Ktz.
10. Pleurosigma Spenceri W. S.
11. Amphiprora ornata Bailey.
12. Gomphonema capitatum Ehr.
13. Gomphonema acuminatum, Ehr.
14. Cocconeis Pediculus Ehr.
15. Eunotia tridentula Ehr.
16. Eunotia lunaris (Ehr.) Grun.
17. Fragilaria capucina Desm.
18. Synedra pulchella Kg.
19. Melosira granulata (Ehr.) Ralfs.
20. Melosira varians Ag.
21. Synedra ulna (Nitz) Ehr.
22. Stephanodiscus minutus Grun.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23. Tabellaria fenestrata Kg.
24. Tabellaria floculosa (Roth) Kg.
25. Oscillaria Froehlichii Kg.
26. Spirogyra tenuissima Kg.
27. Anabæna sp.
27*a*. Gleocapsa sp.
27*b*. Cœleosphærium kutzingianum Naeg.
28. Asterionella formosa Hass, a portion only.
29. Cosmarium Beckii Wille (?).
30. Dictyosphærium ehrenbergianum Naeg.
31. Rhaphidium polymorphum Fres.
32. Surirella elegans Ehr.
33. Pediastrum pertusum Kg.
34. Pediastrum Ehrenbergii (Corda) A. Br.
35. Pediastrum Ehrenbergii var.
36. Pediastrum boryanum (Turp.) Men.
37. Staurastrum crenulatum (Delp) Naeg.
38. Plant parenchyma.
39. Pediastrum Sturmii Reinsch.
40. Stephanodiscus Niagaræ Ehr.
41. Pandorina Morum Bory.
42. Sphærozosma filiforme Rab.
43. Desmidium aptogonium Breb.
44. Arthrodesmus incus (Ehr.) Hass.
45. Polyedrium Longispina (Perty) Rab.
46. Staurastrum polymorphum Breb.
47. Closterium Dianæ Ehr.
48. Closterium ensis Delp.
49. Closterium rostratum Ehr.
50. Staurastrum gracile Ralfs.
51. Scenedesmus caudatus Corda.
52. Parenchyma cell of plant, not unlike large epithelial cell.
53. Euglypha alveolata Duj.
54. Paramonas globosa From.
55. Arcella vulgaris Ehr.
56. Actinophrys sol Ehr.
57. Difflugia globulosa Duj.
58. Stylonichia sp.
59. Ceratium Hirundinella (Müll.) Bergh.
60. Dinobryon Sertularia Ehr.
61. Euglena viridis Ehr.
62. Euglena acus Ehr.
63. Pleuromonas jaculans Perty.
64. Trachelomonas cylindrica Ehr.
65. Trachelomonas piscatoris Fisher.
66. Peridinium tabulatum Ehr.
67. Synura uvella Ehr.
68. Vorticella communis Ehr.
69. Chilodon Cucullulus Müll.
70. Litonotus fasciola Ehr.
71. Paramecium Bursaria Ehr.
72. Phacus longicaudis Ehr.
73. Rotifer vulgaris Ehr.
74. Daphnia Pulex (L.) Müll.
75. Coleps hirtus Ehr.
76. Anguillula fluviatilis Ehr.
77. Anurea cochlearis Gosse.
78. Polyarthra platyptera Ehr.
79. Monostyla lunaris Ehr.
80. Bosmina longirostris (Müll.) Bd.
81. Cyclops quadricornis Müll.

SOME PRACTICAL CONSIDERATIONS IN THE DIAGNOSIS OF VALVULAR DISEASE OF THE HEART.*

By ALBERT C. BARNES, A. M., M. D.,
PHILADELPHIA.

Nearly every physician meets with cases of valvular disease of the heart in which he is unable, with any degree of precision, to determine what pathological conditions the existing physical signs indicate. Many cases present such a complex picture that the experience, educated senses, and judgment of the most competent clinician are taxed to their utmost and, indeed, very often fail to yield the desired results. However difficult the diagnosis of such cases may be, the vast majority of cardiac lesions present physical signs which are characteristic and which should lead the general physician to a precise diagnosis. That such a diagnosis is not made no one with opportunities for observing the study of heart disease will deny. In a given case, if a murmur be present and detected, very often the statement is made that such a murmur exists, and with that the diagnosis rests. When one considers the frequency of valvular disease, and how necessary is an accurate diagnosis for proper treatment, he must recognize that such a condition of mental chaos is most lamentable.

What is the cause of this condition of affairs?

It seems to me that we approach very closely to the facts of the case when we say that it is due in the first place to faulty methods of teaching in our medical schools, and secondly to carelessness—not generally willful—and habits of inaccuracy on the part of physicians. The contrast between the careful detailed study of a cardiac case, the use of all the methods of physical diagnosis—viz., inspection, palpation, percussion, and auscultation—of the German clinicians, and the employment of slipshod percussion, occasional palpation, and the unduly emphasized auscultation of our American teachers is very striking. No less so is the comparison made between the two above-mentioned classes of teachers when they come to consider the all-important subject of the pulse in any given case. Never in this country have I seen clinical lecturers give the pulse element in a cardiac case its necessary emphasis. On the other hand, the German investigator almost invariably begins the examination of a suspected heart lesion with a detailed study of the pulse, supplementing this with inspection, palpation, and determinate percussion of the præcordia, and reserving the phenomena elicited by auscultation of this region as contributory to what he has learned by the other methods. Auscultatory phenomena he very properly makes incidental, not principal.

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* Read by invitation before the Mercer, N. J., County Medical Society, at Trenton, February 9, 1897.

The general physician's culpability lies in the fact that he neglects to familiarize himself with the normal state of affairs at the præcordia and in the pulse wave.

A routine examination of the heart in every case under his charge, no matter of what nature, will do much to teach one not only the characters of the normal sounds of the heart, their relative prominence, areas of audibility, etc., and the gross changes from the normal, but also the finer shades of difference which so often have an intimate bearing on the diagnosis and on the prognosis of valvular disease. The study of the pulse is extremely important. To one who has confined his observations of the pulse to its frequency and regularity, a new world is revealed when he learns how many distinct and separate elements compose every pulse wave, and how nicely and very clearly each variation can be traced to its origin in the heart.

Without detracting one iota from the significance of heart murmurs, it is eminently justifiable and strictly in accordance with the facts of the matter to say that with very few exceptions they are relatively of little value in determining either the characters or the severity of cardiac lesions.

A murmur, soft or harsh, is only indicative of organic disease when the other physical signs corroborate it. Furthermore, from a practical standpoint, the physician is not justified in telling a patient he has heart disease when a murmur is the only physical sign present, because heart disease and early sudden death are often synonymous in the lay mind. To formulate the essence of the foregoing remarks into a brief rule, I might say that the diagnosis of a valvular disease should always be a composite one—*i. e.*, the elicitations of inspection, palpation, accurate percussion, and auscultation should all be given careful consideration and, most important, the characters of the heart sounds noted, and a detailed study of the pulse should be made in every case. My object in addressing you to-night is to emphasize these facts and cite a few cases by way of illustration. Before taking up the more common lesions of the valves in detail let us briefly consider, in a general way, what points are to be observed from a study of the pulse and the heart sounds. Broadbent's * work on the pulse has long since been of indispensable value to me, and, indeed, most of the points on that subject in this address are taken from his book. As his own words on the subject are far more comprehensive than mine would be, I quote him in the following points to be noted: † 1. The frequency—that is, the number of beats per minute—with a note of any irregularity or intermission or instability of the rhythm. 2. The size of the vessel. 3. The degree of the distention of the artery between the beats. 4. The character of the pulsation—whether its access is sudden or gradual, its duration short or long, its subsidence abrupt or slow, note being taken of dicrotism when present. 5. The force or strength of both the constant and variable pressure within the artery as measured by its compressibility. 6. The state of the arterial walls.

The detailed study of the pulse, as is given above, is attended with many difficulties, and it is only by long-continued perseverance that one is enabled to secure satisfactory data.

To mention just one difficulty: the radial artery may be too deep seated, or the individual may have so much adipose tissue that it is practically impossible to obtain any information from the artery at the wrist. In these cases the examiner should turn his attention to the brachial artery in its comparatively superficial location at the inside of the lower end of the biceps. Listening now over the præcordia, we are able to interpret from the characters of the heart sounds the points observed in the pulse. The two muscular elements of the first sound—*i. e.*, those made respectively by the left ventricle and the right ventricle—should be each separately noted to determine the relative working power of each side of the heart. The sound of the left ventricle is best heard a little to the left of the apex, to which point the sound of the right ventricle is not transmitted. This latter sound is most intense over the middle of the sternum, about as high up as the third costal cartilage. By carefully comparing these two sounds one readily recognizes their difference; while they seem to be equally loud, the sound of the left ventricle is appreciably longer than that of the right ventricle.

The characters of the second sounds over both the aortic and pulmonary cartilages should also be carefully noted, for from them we obtain our knowledge of the tension in the general arterial system and also in the pulmonary circuit. Not alone is accentuation of the second aortic sound of much diagnostic value; its absence, as we know, is one of the most trustworthy signs of obstruction at that orifice.

With these facts in mind, let me ask your attention to the points to be observed in determining whether or not organic disease—*i. e.*, true obstruction or regurgitation—exists at a valve over which a murmur can be heard.

Aortic Systolic Murmur.—As is well known, a systolic murmur heard over the aortic cartilage and transmitted in the direction of the blood current does *not* always indicate obstruction at that orifice. Indeed, the most common cause of obstruction at any valve—endocarditis and its vegetations—rarely limits itself to the aortic leaflets; hence, in suspected aortic obstruction, the importance of an examination of the mitral region. Without going into detail, one must always keep in mind the most frequent causes of systolic murmurs—viz., certain conditions of the blood and of the nervous system and, less frequently, roughening of the intima of the aorta.

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* *The Pulse.* W. H. Broadbent, M. D. Lea Brothers & Co., Philadelphia.

† *Ibid.*, pp. 44 and 45.

In our efforts to distinguish between these conditions the character of the murmur gives us no information. I place no faith in the rules laid down in many text-books to determine the difference between the so-called hæmic murmurs and those due to obstruction or regurgitation. The teaching that the murmurs due to anæmia are soft in character, systolic in time, not transmitted, and heard only over the base of the heart, is rank heresy. They may exist anywhere over the præcordia, may be harsh, are often transmitted, and are not always systolic in time.

The rough murmur of true aortic stenosis, usually confined to a very limited area around the aortic cartilage and transmitted into the carotids, may be exactly simulated by a murmur arising from anæmia, neurasthenia, or roughening of the intima of the aorta.

The following case, seen in consultation, is to the point:

An unmarried woman, twenty-three years of age, resident of New Jersey, was the subject of neurasthenia. Auscultation revealed a rather rough, high-pitched systolic murmur at the aortic cartilage, transmitted with equal intensity into the carotids. The murmur was also heard over the subclavian arteries beneath the outer half of the clavicle, but at these regions was much shorter in duration than over the aortic cartilage. The difficulty in determining the cause of this murmur was increased by the presence of a faint thrill felt over the aortic side of the base. It will be observed that this case presented many of the features of aortic obstruction, but as the heart showed no other evidences of change, the aortic second sound was clear and ringing, and, as the pulse was not the long-duration one of stenosis, this valvular lesion could be excluded. Another very important practical point to be observed in auscultating systolic murmurs at the base is to press the bell of the stethoscope in deeply over the episternal notch and listen during complete expiration. The murmur of organic disease persists during this procedure, while that of a functional nature commonly disappears. The cause of the murmurs in anæmia and allied states has been explained—by Fräntzel, I think—as due to vibrations of the coats of the artery from vasomotor disturbance.

The differentiation between atheroma of the aorta, when a systolic murmur is present, and true stenosis, although generally easy, is sometimes made more difficult when one comes to study the pulse. It is a matter of some delicacy to be able to separate the characteristic pulse of uncomplicated stenosis from that of atheroma; the high tension of the latter sometimes closely resembles the long-drawn-out wave of the former. Here, as always, one must look at the case in its entirety. Careful attention to the other physical signs will generally clear up the diagnosis, as was illustrated by the following case which I studied at Daland's clinic: A colored woman, aged thirty-five years, with a history of rheumatism manifesting itself at long intervals, had a rough, loud systolic murmur at the aortic cartilage, which was transmitted with marked intensity into the carotids, particularly the right. The second aortic sound was very much accentuated and snappy, and entirely clear of murmur. A faint systolic murmur was also present at the apex, but not transmitted. The pulse, studied in the brachial artery, revealed a stiff vessel, full between the beats; only by minute study of the wave could one say that it was not the wave of aortic stenosis. Much help was rendered in classifying this case by the snappy character of the aortic second sound and the concomitant signs of general arterial sclerosis. I made the diagnosis of probable roughening of the intima of the aorta. Aortic stenosis may often be positively diagnosticated by a study of the pulse alone. Before going any further than an examination of the radial artery I have seen Vierordt make such a diagnosis. When one considers the nature of the lesion at the aortic orifice, and imagines how the heart is acting in consequence of such obstruction, it is easy to understand the changes in the pulse. The frequency and regularity are not often affected. As the blood is not propelled as suddenly into the obstructed orifice as it would be into a free one, it takes a longer time for the ventricle to discharge its contents, hence the pulse is less sudden and of longer duration than normal. The wave lifts the finger gradually, seems to linger, and then reluctantly subsides. Another characteristic is the small size of the artery. The cardiac changes are not pronounced unless an extreme degree of stenosis exists or the disease is of long duration. If uncomplicated hypertrophy exists, not only in this condition but in any cardiac lesion, the displaced apex beat and the loud, prolonged first sound, heard best at the apex and not at the aortic cartilage, will enable one to recognize the condition; while if dilatation has ensued, the short, sharp first sound, heard as well at the base as at the apex, is indicative of this condition. The second aortic sound shows changes which, on account of their constancy and easy recognition, are valuable aids to diagnosis. Instead of the normal sharply cut sound over the aortic cartilage we hear a weak, obscured one. These changes are due to the less violent recoil in consequence of the diminished pressure in the arterial system, and also, to some extent, to the thickened, structurally altered valves.

Aortic Regurgitation.—This condition seldom presents any difficulty in diagnosis; the well-known and easily recognized "Corrigan's pulse," the pronounced diastolic murmur transmitted down the sternum, and the associated changes in the size and position of the heart are characteristic of aortic incompetency. My only reason for mentioning this lesion is to emphasize the importance of estimating accurately the amount of damage to the valves, and thereby securing grounds upon which to base the prognosis. The brief history of an observed case, studied with Hoover, of Cleveland, will serve to illustrate the possibility of a mistake in diagnosis: A man, aged twenty-five years, with water-hammer pulse, jumping carotids, marked pulsation over the base of the heart, and a very pronounced systolic thrill over the entire enlarged base. Auscultation revealed very loud systolic and diastolic murmurs over the aortic cartilage and midsternum. The diastolic murmur was audible as far as the ensiform, the systolic one equally intense in the carotids; this latter murmur had all the characteristics of an aneurysmal bruit. The patient complained of slight pain over the base of the heart. It will be observed that the composite picture of this case closely resembled that of aneurysm of the arch of the aorta. This similarity was increased by the displacement of the heart, due to changes in its walls and cavities, the apex beat having been located under the eighth rib an inch and a half outside the nipple line. As no expansion was present over the pulsation at the base, and as the signs of aortic incompetency were so marked, the diagnosis of insufficient aortic valves and dilatation of the root of the aorta was made.

In determining the amount of insufficiency, a study of the characters of the heart sounds and the pulse is of the greatest importance. Careful, accurate percussion also gives valuable information, for it is by this method that one learns whether the changes in the heart are due to uncomplicated, comparatively, hypertrophy, or hypertrophy with a predominating dilatation. In the former case the increased area of cardiac dullness will preserve its triangular shape, while in the latter a quadrilateral area is revealed. More reliable, however, are the results obtained from the first sound as indicating hypertrophy or dilatation. The prolonged, forcible impulse of the first sound in hypertrophy differs materially from the short, sharp sound of dilatation. Much may be learned as to the amount of leakage from auscultation of the second aortic sound. If loud, and preserving its "tension-vibration" characters, the amount of regurgitation is probably small, while a weak or absent second sound indicates much incompetence. The pulse element in the estimation of the amount of insufficiency is also important. If there is projectile pulsation, immediate sudden collapse, considerable loss of time between the heart beat and the pulsation at the wrist, and well-marked capillary pulsation, an extreme amount of regurgitation takes place.

Mitral Stenosis.—A rough murmur occurring just previous to the first sound of the heart and terminating in an abrupt loud shock is absolutely pathognomonic of narrowing of the mitral orifice. Very often in these cases a thrill is communicated to the hand placed over the præcordia.

With such a seemingly clear physical basis upon which to rest a diagnosis one would think that mitral stenosis could always be readily recognized. This, however, is not the case, because a murmur at the apex, occurring at what seems to be presystolic time, may be indicative of other conditions. In the first place, it is sometimes exceedingly difficult to time this murmur because of the great similarity between the characters of the first and second sounds. I know of no condition which is so exasperating as the effort to correctly time this murmur. Then, too, the systolic murmur of mitral regurgitation and the diastolic one of aortic incompetency may, under certain circumstances, simulate the presystolic murmur. That this is not a fancied difficulty I am absolutely sure, for I saw at Leyden's clinic a case of mitral stenosis which had been pronounced aortic regurgitation by several competent observers.

In determining the condition which occasions a murmur at the apex, valuable and very often conclusive evidence can be obtained by noticing precisely its area of audibility.

In the condition under consideration the murmur is heard over only a very limited area, and that not exactly at the apex. As one moves the bell of the stethoscope inward from the apex toward the sternum the murmur becomes audible, and is best heard a little to the right and above the apex.

It is particularly in cases of mitral stenosis that a few seconds' active exercise on the part of the patient will develop previously latent physical signs; the murmur becomes more pronounced, and the thrill and the reduplicated second sound are developed. On several occasions, when it has been impossible to convince myself of the time of a murmur in a suspected case, I have developed a reduplicated second sound by exercise, and with this corroboration made a diagnosis of mitral stenosis. The presystolic thrill terminating abruptly with the advent of the first sound of the heart loses its diagnostic value because of its inconstancy. Its presence is practically diagnostic, but its absence is of no significance; indeed, it is a common thing to find it at one examination and in a few days to find no trace of it. Of the heart sounds, the first one occasionally gives evidence of mitral stenosis. In a suspected case, a sudden, sharp first sound is considered by some clinicians to be of much diagnostic value.

The pulse in this lesion is small, long, full between the beats, and moderately easily extinguished by pressure. In the later stages, when the working powers of the heart fail, the pulse may become irregular, or only alternate contractions of the heart may be manifested in the surface vessels.

Mitral Regurgitation.—It would scarcely be necessary to comment upon this lesion were it not for the fact that a systolic murmur at the apex is not always indicative of structural change in the mitral valve. The myocarditis of the acute infectious diseases is often manifested by a murmur similar in every respect. The one condition, however, from which it is often necessary to differentiate mitral regurgitation is the relative insufficiency of this valve consequent upon dilatation of the left ventricle from causes other than valvular disease. Particularly representative of this latter class may be mentioned the late left ventricle dilatation of Bright's disease.

In cases of this affection where, with the usual signs of increased arterial tension, the second aortic sound has been loudly accentuated, the overtaxed ventricle is no longer able to carry on its work against the increased resistance, it becomes overstrained, dilates, the second aortic sound loses its accentuation, and a relative insufficiency of the mitral valve results.

It is sometimes exceedingly difficult to distinguish the organic from the relative insufficiency. The physical signs in most cases are identical, but careful attention to the history will often enable one to decide the nature of any given case.

In true mitral regurgitation—the lesion most often positively diagnosticated by the general physician—it is a matter of much importance to be able to tell the patient how badly his heart is damaged. It is possible in most cases to do this by a study of the characters of the heart sounds and by determining by physical signs the existing changes in the cardiac chambers and muscle. The murmur itself—either its intensity or quality—is of no value.

If it is of the nature of a prolongation of the first sound, and this latter preserves its qualities of valvular tension, there is probably not much leakage. This probability is strengthened, as there is little or no evidence of increased tension in the pulmonary circuit—*i. e.*, if the second sound at the pulmonary orifice is not much accentuated. If, on the other hand, the murmur completely replaces the first sound, if the second pulmonic is much accentuated, and particularly if the chambers show signs of dilatation, there is much incompetence. The pulse during the stage of compensation is regular, full, and of low tension, but compensation failing, the extremely irregular pulse develops. In conclusion, I would urge that the heart be looked upon in every case as primarily a muscular organ, and its ability to carry out the necessary amount of work be carefully determined by a study of the heart sounds. The pulse particularly should be analyzed before cardiac remedies are applied, because all these drugs affect in a pronounced degree the tension of the vessels. Indeed, there can be no rational cardiac therapeutics without a definite knowledge of the fullness of the artery between the beats. It is a common thing to see digitalis given in full doses at short intervals where the pulse reveals a tense vessel. In these cases apoplexy is Nature's method of correcting the physician's mistake. Always take into account the condition of the heart muscle and the elements of the pulse, and remember their intimate relationship.

1531 Ritner Street.

A New Journal of Skin and Venereal Diseases.—We have received the first number of the *American Journal of Dermatology and Genito-urinary Diseases*, edited by Dr. S. C. Martin, of St. Louis. It is a quarterly of thirty-eight pages of reading matter.

THE ACTION OF TAKA-DIASTASE IN VARIOUS GASTRIC DISORDERS.

*AN EXPERIMENTAL STUDY.**

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Since taka-diastase has been introduced into medicine and its amylolytic action has been demonstrated, this remedy has been employed in various forms of gastric disorder. After the first trials the indications for the use of drugs become more and more limited and exact until, having been thoroughly tested, they are clear and well defined; so with taka-diastase. The great difficulty in determining the exact indication for the use of most medicaments does not apply to the artificial ferments in their applicability to gastric disorders, for their action can be tested not only in the test tube, but experiments may be made directly with the gastric juice both within the stomach and outside the body.

The amylolytic action of taka-diastase has been settled beyond all doubt. This substance, under proper conditions, converts one hundred times its weight of starch in ten minutes. But, though this has been established by numerous experimenters, the therapeutic indications for its use are still ill-defined, for no one has as yet tested the action of taka-diastase upon digestion within the stomach itself.

It has generally been stated that taka-diastase is indicated in amylaceous dyspepsia, but this term is vague, and signifies a symptomatic condition and not a definite disorder. In order to clearly define the indication for the use of taka-diastase the following experiments were performed.

A test-breakfast was taken, and the contents of the stomach removed after an hour; after washing out the stomach a similar breakfast, to which two and a half grains of taka-diastase had been added, was swallowed, and also removed after the end of an hour. Comparisons were made in the two instances.

The test-breakfast utilized in the experiment consisted of the ordinary Ewald test-breakfast, forty grammes of white bread and three hundred cubic centimetres of water. In the second series two and a half grains of taka-diastase were added to such a meal. In both instances the contents of the stomach were completely removed at intervals of sixty, forty, twenty, and ten minutes.

The character, quantity, and temperature of both breakfasts were always the same in those cases in which comparisons were made. Complete expression of the gastric contents was made in all instances; the quantity thus obtained is in a measure an index of the motor activity of the stomach. The gastric filtrate was tested with litmus, Congo paper, phloroglucin vanillin (for free hydrochloric acid). The total acidity was estimated with one tenth normal NaOH solution, phenolphthalein being used as an indicator, and the hydrochloric acid determined by Boas's modification of the Sjöquist method. The experiments were made upon persons with perfectly normal digestion (Table I) and cases of nervous dyspepsia with normal motor and secretory functions (Table II). Tables I and II show—

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* Read before the ninety-ninth annual meeting of the Medical and Chirurgical Faculty of the State of Maryland, Baltimore, April 29, 1897.

Table I.—*Normal Cases.*

Name.	No.	Test breakfast.	Time reserved, seconds.	Quantity removed in e c.	Congo reaction.	Phloroglucin vanillin.	Iodine reaction.	Tot'l acidity.	Per cent. HCl.
J. J.	1	Ewald.	60	40	Yes.	Yes.	Violet.	58	0·1732
	2	Ewald.	40	85	Yes.	Yes.	Blue.	36	0·1327
	3	Ewald.	20	190	No.	No.	Blue.	30	0·1096
	4	Ewald.	10	220	No.	No.	Blue.	14	0·0132
	5	Ewald + 2½ gr. T. D.	60	37	Yes.	Yes.	Violet.	60	0·1659
	6	Ewald + 2½ gr. T. D.	40	80	Yes.	Yes.	Blue.	35	0·1426
	7	Ewald + 2½ gr. T. D.	20	140	No.	No.	Blue.	27	0·1084
	8	Ewald + 2½ gr. T. D.	10	200	No.	No.	Blue.	16	0·0144

Table II.—*Cases of Nervous Dyspepsia, with Normal Secretory and Motor Functions.*

Name.	No.	Test breakfast.	Time removed, minutes.	Quantity in c. c.	Congo reaction.	Phloroglucin vanillin.	Iodine reaction.	Tot'l acidity.	Per cent. HCl.
F. K.	1	Ewald.	60	50	Yes.	Yes.	Violet.	64	0·1692
	2	Ewald.	20	110	No.	No.	Blue.	28	0·1012
	3	Ewald + T. D.	60	54	Yes.	Yes.	Violet.	60	0·1641
	4	Ewald + T. D.	20	100	No.	No.	Blue.	31	0·1084
T. P.	1	Ewald.	60	56	Yes.	Yes.	Violet.	54	0·1821
	2	Ewald.	20	130	No.	No.	Blue.	21	0·0641
	3	Ewald + T. D.	60	50	Yes.	Yes.	Violet.	57	0·1817
	4	Ewald + T. D.	20	120	No.	No.	Blue.	20	0·0592
J. M.	1	Ewald.	60	48	Yes.	Yes.	Violet.	62	0·1742
	2	Ewald.	20	178	No.	No.	Blue.	24	0·0781
	3	Ewald + T. D.	60	50	Yes.	Yes.	Violet.	58	0·1717
	4	Ewald + T. D.	20	164	No.	No.	Blue.	26	0·0629

1. Names of experiments.
2. Number of experiments.
3. Test-breakfast utilized; Ewald representing Ewald test-breakfast; T. D. representing two grains and a half of taka-diastase.
4. Time removed.
5. Quantity obtained.
6. Reaction obtained with Congo paper.
7. Reaction for free hydrochloric acid with phloroglucin vanillin.
8. Reaction for starch and erythrodextrin with Lugol's solution.
9. Acidity as determined by means of one tenth Na OH solution, phenolphthalein being used as indicator.
10. Hydrochloric acid as determined by Sjöquist's method.

The gastric contents expressed were about the same in quantity in both instances in which the taka-diastase had been taken with the test-breakfast and in those in which it had not been. The total acidity and percentage of hydrochloric acid was also about the same.

Thus, in Table I, case J. J., when the breakfast was expressed at the end of sixty minutes the quantity removed was about the same (forty cubic centimetres and thirty-seven cubic centimetres), the percentage of hydrochloric acid was likewise the same in amount (0.17 and 0.16) as when taka-diastase had been added to the breakfast. Similarly, in Table II, case F. K., a case of nervous dyspepsia with normal motor and secretory functions, the quantities of contents obtained at the end of sixty minutes were fifty cubic centimetres and fifty-four cubic centimetres; the percentage of hydrochloric acid, 0.16 and 0.16; the digestion of starches was the same in both instances. Taka-diastase therefore produces no change upon either the motor or secretory functions of the stomach under normal conditions, or in cases of nervous dyspepsia with normal motor and secretory functions, nor is the digestion of starches affected by it.

Table III.—*Cases of Normal Secretory Function, with Decreased Motor Function (Atony).*

Name.	No.	Test breakfast.	Time in minutes.	Quantity removed in c. c.	Congo reaction.	Phloroglucin vanillin.	Iodine reaction.	Tot'l acidity.	Per cent. HCl.
K.	1	Ewald.	60	120	Yes.	Yes.	Violet.	58	0·1682
	2	Ewald.	20	230	No.	No.	Blue.	18	0·0492
	3	Ewald + T. D.	60	80	Yes.	Yes.	Violet.	54	0·1691
	4	Ewald + T. D.	20	200	No.	No.	Blue.	20	0·0471
P. T.	1	Ewald.	60	140	Yes.	Yes.	Violet.	62	0·1714
	2	Ewald.	20	225	No.	No.	Blue.	21	0·0529
	3	Ewald + T. D.	60	125	Yes.	Yes.	Violet.	60	0·1692
	4	Ewald + T. D.	20	190	No.	No.	Blue.	24	0·0593

Table III represents two cases of atony of the stomach, with normal secretory function. In both instances it is shown that taka-diastase somewhat increases the motor function of the stomach without having any influence on the secretion of acid or on the digestion of starches. Thus in case K. T. when the contents of the stomach were removed after sixty minutes the quantity obtained was a hundred and twenty cubic centimetres, the total acidity 58, and the percentage of hydrochloric acid 0.168; but when taka-diastase had been taken with the breakfast, the quantity obtained was eighty cubic centimetres, the total acidity 54, and the percentage of hydrochloric acid 0.169; in both cases the erythrodextrin reaction was obtained.

Table IV represents cases of subacidity; of these there are two of purely nervous subacidity (M. A. and C. F.) and two of chronic gastric catarrh (P. R. and T. B.). In the cases of nervous subacidity there is no difference in the secretion of acid or the digestion of starches, whether the taka-diastase had been taken or not. In the cases of gastric catarrh, however, the total acidity and percentage of hydrochloric acid is much increased when taka-diastase is given with test-meal; the digestion of starches is also further advanced in these cases. Thus, in the case of M. A., nervous dyspepsia, when the contents of the stomach were removed at the end of sixty minutes, the total acidity was 14, the percentage of hydrochloric acid 0.04, with a violet (erythrodextrin) reaction, and when taka-diastase had been added to the breakfast, the total acidity was 12, the percentage of hydrochloric acid 0.214, the starch reaction being also violet.

TABLE IV.—*Cases of Subacidity.*

Name.	No.	Diagnosis.	Test breakfast.	Time in minutes.	Quantity in c. c.	Congo reaction.	Phlorogl. vanillin.	Iodine reaction.	Total acidity.	Per cent. HCl.
M. A.	1	Nervous dyspepsia.	Ewald.	60	40	No.	No.	Violet.	14	0·04216
	2		Ewald.	20	85	No.	No.	Blue.	3	....
	3		Ewald + T. D.	60	38	No.	No.	Violet.	12	0·02149
	4		Ewald + T. D.	20	75	No.	No.	Blue.	4	....
C. F.	1	Nervous dyspepsia.	Ewald.	60	50	Yes.	Yes.	Violet.	20	0·06892
	2		Ewald.	20	110	No.	No.	Blue.	2	....
	3		Ewald + T. D.	60	48	Yes.	Yes.	Violet.	18	0·06427
	4		Ewald + T. D.	20	135	No.	No.	Blue.	5	....
P. R.	1	Chronic gastric catarrh.	Ewald.	60	70	No.	No.	Colorless (achroodextrin).	10	0·00915
	2		Ewald.	20	120	No.	No.	Blue.	...	....
	3		Ewald + T. D.	60	65	No.	No.	Colorless (achroodextrin).	18	0·0572
	4		Ewald + T. D.	20	100	No.	No.	Violet.	4	....
I. B.	1	Chronic gastric catarrh.	Ewald.	60	35	No.	No.	Colorless (achroodextrin).	8	0·00198
	2		Ewald.	20	78	No.	No.	Blue.	...	....
	3		Ewald + T. D.	60	44	No.	No.	Colorless (achroodextrin).	17	0·0598
	4		Ewald + T. D.	20	89	No.	No.	Violet.	5	....

However, in case P. R., chronic gastric catarrh, the total acidity was 10, the percentage of acid 0.009 when the breakfast was removed at the end of an hour; but when taka-diastase had been added, the total acidity was 18 and the percentage of acid 0.05; in both cases a colorless (achroodextrin) reaction was obtained; in the same case, when the gastric contents were removed at the end of twenty minutes, the total acidity in the first instance is 0, in the second, 4; the reaction for starch was still blue in the first case, but in the second an erythrodextrin (violet) reaction was obtained.

Table V represents the cases of superacidity. In this series of four cases we have one of ulcer and three of simple superacidity. In all we find the excess of hydrochloric acid diminished by the taka-diastase, the motor function of the stomach increased, and the digestion of starches further advanced. Thus in case A. T. (ulcer) when the contents of the stomach were removed at the end of sixty minutes the quantity obtained was sixty cubic centimetres, the total acidity 110, the percentage of HCl 0.39; but when taka-diastase had been taken the quantity obtained was forty-five cubic centimetres, the total acidity 80, and the percentage of hydrochloric acid 0.19; in the first instance a blue (starch) reaction was obtained, while in the second the reaction was violet (erythrodextrin).

In every case of superacidity taka-diastase seems to exert a most remarkable effect upon the digestion of starches, as well as in decreasing the excess of acid and increasing the motor functions of the stomach.

Our next attempt was to determine what effect taka-diastase had in replacing the saliva in gastric digestion. As is well known from the experiments of Sticker, Schuld, Biernacki, and myself, the saliva plays an important rôle in gastric digestion, in that an absence of salivary secretion not only results in an absence of amylolysis, but that the proteolysis is much retarded. For this purpose a breakfast was utilized, consisting of white of egg and starch solution, an amount equal to two hundred and seventy cubic centimetres. The starch solution consisted of one hundred to two hundred cubic centimetres of a four-per-cent. solution of starch—that is, four to eight grammes of starch boiled with one hundred and fifty to two hundred and fifty cubic centimetres of water and twenty cubic centimetres of raw egg albumin then added (represented by 1 e. 250 st.). In the first series of experiments the breakfast was introduced through the stomach-tube after previous lavage. During the following half hour the saliva was collected in a cup, and at the end of this time the gastric contents were expressed. The patient was now allowed to rest for fifteen minutes.

TABLE V.—*Cases of Superacidity.*

Name.	No.	Diagnosis.	Test breakfast.	Time in minutes.	Quantity in c. c.	Congo reaction.	Phlorogl. vanillin.	Iodine reaction.	Total acidity.	Per cent. HCl.
A. T.	1	Ulcer.	Ewald.	60	60	Yes.	Yes.	Blue.	110	0·3984
	2		Ewald.	20	120	No.	No.	Blue.	30	0·0987
	3		Ewald + T. D.	60	45	Yes.	Yes.	Violet.	80	0·1984
	4		Ewald + T. D.	20	95	No.	No.	Violet.	12	0·0171
K. P.	1	Simple superacidity.	Ewald.	60	75	Yes.	Yes.	Blue.	98	0·2984
	2		Ewald.	20	140	Yes.	Yes.	Blue.	45	0·1724
	3		Ewald + T. D.	60	61	Yes.	Yes.	Violet	82	0·2754
	4		Ewald + T. D.	20	110	No.	No.	Violet slightly.	27	0·0825
A. L.	1	Simple superacidity.	Ewald.	60	48	Yes.	Yes.	Blue.	112	0·3921
	2		Ewald.	20	142	Yes.	Yes.	Blue.	38	0·0991
	3		Ewald + T. D.	60	40	Yes.	Yes.	Violet.	92	0·2919
	4		Ewald + T. D.	20	130	Yes.	Yes.	Violet.	14	0·0392
M. L.	1	Simple superacidity.	Ewald.	60	95	Yes.	Yes.	Blue.	91	0·2874
	2		Ewald.	20	112	No.		Blue.	27	0·0924
	3		Ewald + T. D.	60	82	Yes.	No. Yes.	Violet.	74	0·2472
	4		Ewald + T. D.	20	101	No.	No.	Violet.	12	0·0313

TABLE VI.—*Effect of Taka-diastase on the Starch Digestion in Normal Cases and in Nervous Dyspepsia with Normal Secretory and Motor Function.*

Name.	No.	Test breakfast.	Am't in c.c.	Congo reaction.	Phlorogl. vanillin.	Iodine reaction.	Total acidity.	Per cent. HCl.	
T. J.	1	1 E. + 250 st.	75	Weak blue.	No.	Strong blue.	12	0·0378	Taken through tube.
	2	1 E. + 250 st. + 2½ gr. T. D.	50	Strong blue.	Reaction.	Violet.	40	0·1246	Taken through tube.
F. K.	1	1 E. + 250 st.	60	Weak blue.	No.	Strong blue.	18	0·0492	Taken through tube.
	2	1 E. + 250 st. + 2½ gr. T. D.	32	Strong blue.	Reaction.	Violet.	46	0·1327	Taken through tube.
T. M.	1	1 E. + 250 st.	60	Weak blue.	No.	Blue.	14	0·0392	Taken through tube.
	2	1 E. + 250 st. + 2½ gr. T D.	20	Strong blue.	Reaction.	Violet.	38	0·1279	Taken through tube.

The stomach was then again washed out and the same quantity of a similar breakfast, with the addition of two grains and a half of taka-diastase, introduced through the tube. After half an hour the gastric contents were again removed and compared with those obtained in the previous experiment. As daily variations in the motor and secretory functions of the stomach occur, the two experiments, as in all the other cases given above, were made on the same day. The character, quantity, and temperature of the two breakfasts were always the same in those cases in which comparisons were made. With the starch breakfast it is easy to tell to what degree the breakfast has been acted upon by the taka-diastase. The experiments were made upon three persons with perfectly normal motor and secretory functions. In every instance the taka-diastase manifested a markedly beneficial action upon the gastric digestion. The total acidity and percentage of hydrochloric acid were markedly increased under its use, the motor function much improved, and the digestion of starches further advanced.

Thus in the case of T. J. the quantity of contents obtained at first was seventy-five cubic centimetres free hydrochloric acid, of a strong blue (starch) reaction, a total acidity of 12, and percentage of acid 0.03; when, however, the taka-diastase had been added to the breakfast the quantity was but fifty cubic centimetres, containing free hydrochloric acid with a violet (erythrodextrin) reaction, of a total acidity of 40 and percentage of acid 0.12.

The taka-diastase therefore seems to an extent not only to replace the saliva in converting starches into sugar, but serves another function of the saliva in promoting the secretory as well as the motor function of the stomach.

From these experiments it may be concluded:

1. That taka-diastase exerts no influence under normal conditions upon gastric digestion nor upon cases of nervous dyspepsia with normal motor and secretory functions.

2. That in cases of motor disturbances of the stomach with normal secretory functions, such as atony, taka-diastase increases the motor action without in any way influencing the secretory function or the digestion of starches.

3. That in cases of subacidity taka-diastase acts differently, according to whether there is a catarrh or a nervous dyspepsia. In nervous cases it has no effect whatever upon digestion, while in cases of catarrh it appears to have a tendency to increase the flow of acid and promote the digestion of starches.

4. That taka-diastase exerts its most favorable influence in cases of superacidity. It not only promotes the digestion of starches in these cases but diminishes the excess of acid and increases the motor function.

5. That taka-diastase in a great measure replaces the saliva when this secretion is diminished or absent. It then not only digests the starches in the stomach, but serves the other function of the saliva in stimulating the gastric secretion and therefore promoting the proteid digestion.

A SIMPLE AND RAPID METHOD OF GASTROSTOMY.

By the late R. J. HALL, M. D.,
SANTA BARBARA, CAL.

Witzel's, Frank's, and Kader's operations are already so simple in technique, and give such perfect results in preventing leakage, that it may well appear superfluous to suggest any improvement on what Miculicz, in speaking of Kader's method, calls the "ideal." Such operations, however, are usually performed on patients much reduced by starvation and the progress of their disease, and the saving of even a few minutes may be of the greatest importance. Before reading of Kader's operation, I had devised and tried upon a dog a method which, while giving a result almost identical with his, is certainly simpler in technique and more rapidly performed. Subsequent experiments have shown it to be absolutely effective in preventing leakage.

The operation is as follows: A very short incision is made on the left side, parallel to and about an inch below the free border of the ribs; the stomach is seized and drawn through the incision until it forms a cone from an inch to an inch and a half in height, the base, of course, next the skin. The circumference of the base of this cone is then attached to the abdominal wall by either continuous or interrupted sutures, including, of course, the peritonæum. The cone is then inverted, so that its apex protrudes into the stomach. If the case is urgent, the apex can be pierced at once and a tube introduced surrounded by protective gauze, otherwise the cavity of the inverted cone may be filled with gauze and the opening made later. The whole operation is so simple that it need not occupy more than five or six minutes, and in urgent cases could be done, with the aid of a few minims of cocaine solution, without general anæsthesia.

PROPER FEEDING
THE MOST IMPORTANT PART OF TREATMENT IN CHRONIC TUBERCULOSIS OF THE LUNGS.

By ACHILLES ROSE, M. D.

I have received a letter from a female patient who is at present in a sanatorium in the Black Forest in Germany. She writes to her family:

> "The *régime* followed at this celebrated 'cure' is a very strict one, and no one is here for fun or much comfort. Any one very ill would find it almost impossible to carry it out, I should think. The great idea is to build up the whole system with a process of food stuffing (each article of diet being specially chosen for its fat-producing and strength-giving properties), with rest, judicious and carefully regulated slow exercise, and a continual gain-

ing in weight, until the system is so strong that it throws off all disease and one becomes impervious to germ destroyers and colds. I still get hoarse easily, but I am so much better every way and my cough is so much less that you would hardly know me. Although the snow is deep and still coming down, we are out in it every day. I read a good deal when I am resting, but have not done much fancy work yet. The food stuffing makes one feel very lazy. My room is fairly comfortable, electric light and warm air, but I always have the windows wide open except when I go out. It is wonderful what a tonic this fresh air is. Dr. Walther is kind but very strict. There are so many patients all over Europe waiting to get in here that he is very independent. I hope to lay in a store of health and strength to last me many years to come, and if P.'s cough gets bad this is the place to come to to get well, but it takes an awful lot of grit to swallow down a lot of fat and raw meats. I usually mix my raw beef (which is minced fine) with honey for breakfast and spread it on bread like jam! I think I can say with truth that we have not had one single article of food that I really like (or would choose myself) since I came, unless it is oranges and custard and a few of the vegetables. Our diet is a great deal of meat three times a day and a lot of milk and butter too. Everything is very good of its kind. Twelve Jersey cows are kept. We have any amount of pork! But I could go on with the food item forever. Ploding [*sic*] and being weighed are the great events, but I am bound to get through with this business—it is only a matter of grit—and after all it is a choice of two evils. Don't worry about me. I could not be in a better place and every day I am gaining strength and health."

Simultaneously with this letter I received a copy of a treatise by my friend Dr. Georg Schröder, who is connected with the sanatorium for pulmonary diseases of Hohenhonnef on the Rhine, which treatise is entitled *Ueber das Fieber bei der chronischen Lungentuberkulose.*

The letter of the lady patient is almost an illustration to the treatise of my friend. He says: "The exertions of the bacteriologists to find a specific remedy against the tubercle bacillus are certainly to be appreciated highly; thus far, however, we are not in possession of an antibacterial remedy, and the prospects of phthisiotherapy in this direction are not very promising." I agree with Dr. Schröder when he says that πολυπραγμοσύνη (not polypragmasy, as we so often read in German medical papers and books) in regard to the bacteriology of tuberculosis is carried on to such an extent that in some quarters the study of the disease itself and its course is neglected. He demonstrates the importance of hygienic-dietetic treatment, and how much such treatment is to be modified according to the nature and the course of the fever. Ughetti says: "If a real progress can be marked in regard to our knowledge of the nature of fever in general it is this, that we are convinced now that we know nothing about it, while fifty years ago there were some who imagined they knew it. At present the nature of fever is a secret for everybody."

Summing up all that has been observed about the relations of fever to pulmonary tuberculosis, it appears that the tubercle bacillus itself may produce fever. As a matter of course it is associated with generators of pus and other kinds of toxines. Overexertion may cause, in healthy persons, a slight elevation of temperature lasting a short time. In phthisical patients it produces high fever, be the exertion mental or bodily. The knowledge of this fact is of great importance in regard to treatment. It is noteworthy how some cases are characterized by fever while others run their course more or less without it. The reason for this may be that in the non-febrile cases there exist sufficient alexins in the blood. Schröder's essay gives, among others, the history of his patients who, notwithstanding their persisting high fever, increased in weight. They did so because a well-selected proper diet kept the functions of the alimentary tract organs intact. Even in cases in which the fever will not cease, notwithstanding rational therapeutic measures, the prognosis may not be absolutely bad. All depends upon how the patient tolerates the fever. It is surprising how well and how long some phthisical persons can stand elevation of temperature.

In regard to the treatment of fever in chronic tuberculosis of the lungs, and to the treatment of this disease in general, the main principle has to be not to act according to pattern, but to individualize.

In reading Schröder's and similar reports of the results of treatment in sanatoria on the other side of the Atlantic, I am delighted to find benefit for myself which will benefit my patients; I am delighted to be spared the reading about bacilli and tuberculin in endless repetition. Since we are accustomed now to learn so much about the danger of the tubercle bacillus, since we hear and read of the board of health's ordinance in regard to this microbe, may I be allowed to call attention, as I have done so many times, to the three things which seem to me out of place, which have no right of existence, since we are made familiar with the ætiology of tuberculosis?

It is first of all the carpet! If we preach, wherever opportunity offers, its dangers, this specific English piece of furniture will gradually be done away with.

The second thing is that hole which euphoniously is called the dark bedroom.

The third thing is the basement.

I should like to suggest to building speculators to erect houses on which they could write: "In these houses there are neither dark bedrooms nor basements, and there is no need of a carpet." These houses would rent well, and would be occupied by most desirable tenants.

Horseflesh as Human Food.—"It is stated that horseflesh still appears to hold its own as an article of food with the poorer classes in Belgium. Recent statistics show that in Antwerp alone nearly four thousand horses were slaughtered last year for human consumption, and the number of shops dealing exclusively in horseflesh in the Belgian port exceeds thirty. Over ten thousand horses were imported during the year for conversion into meat, this number being largely in excess of the imports of cattle."—*British Medical Journal.*

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THE DISPENSARY BILL.

It is announced that the Governor of the State of New York has declined to sign the bill to regulate medical charity in the city of New York, commonly known as the dispensary bill, which was recently passed by the legislature. In its original form, which we published in the *Journal* for April 10th, the bill contained a number of crudities, but for the most part it was purged of these before its passage. It had, in fact, become so good a bill as to command the almost unanimous support of the medical profession. This was shown by the approval of its provisions implied in a report of a committee on the abuse of medical charity presented to the Medical Society of the County of New York at its last meeting, on Monday evening of this week. The report was accepted, and the committee continued, so it may be possible to secure some limitation of the abuse, even in the absence of legislative aid.

It was stated in the report that the committee had endeavored to get the managers of the dispensaries to cooperate in the effort to correct the evils of giving free medical treatment to persons able to pay a physician's charges and of giving medicine and treatment for a fee so ridiculously small as to humiliate the profession, and yet large enough to give the beneficiaries the impression that they were not objects of charity at all. The Charity Organization Society and seventy-six dispensaries were reported to have expressed their willingness to cooperate with the committee, and it is to be presumed that they will still be willing to do so. At all events, we shall soon find out how ready they are to aid in checking the abuse that is now going on.

A somewhat stormy discussion preceded the unanimous vote to accept the report and continue the committee, but it related rather to collateral matters than to the purport of the report itself. Dr. Egbert H. Grandin is reported to have said in that discussion: "But, mark me, gentlemen, the time will come when this society will strike the weed at the root. The time will come when the hospitals will find that they can not get the indispensable adjuncts for carrying on their work. The time will come when boards of managers will be unable to get men to fill vacancies on the staffs in twenty minutes, as they can now." We believe, too, that that time will come, but much will have to be done to hasten its coming, and the essential thing is to establish an efficient esprit de corps in the profession.

THE SEMICENTENNIAL OF THE AMERICAN MEDICAL ASSOCIATION.

It is fitting that the meeting that will mark the entrance of the association upon the fiftieth year of its existence should be held in Philadelphia, the city in which it was organized. Next week Philadelphia may be expected to assume the appearance of its old supremacy in medical matters. This it is safe to predict from the labors of the committee of arrangements. The occasion is one to call forth enthusiasm, of which there is seldom any lack at the association's meetings, but our Philadelphia friends will see to it that that sentiment is not allowed to smother the legitimate work of the meeting. An excellent programme has been arranged, and it will be carried out so far as the time available will permit. In particular, Dr. Senn's presidential address, it may be taken for granted, will be well worthy of close attention. The same may be said of Dr. Davis's address, which is to include an account of the origin of the association and something of its history. Dr. Roberts, the chairman of the committee on anniversary exercises, expresses the hope that the few other surviving original members besides Dr. Davis—namely, Dr. Stillé, of Philadelphia, Dr. Johnson, of St. Louis, and Dr. Atwater, of Springfield, Massachusetts, will all be present to take part in the meeting—a hope in which every member of the profession should join heartily.

The presence of the presidents of State medical societies and of State boards of medical examiners, who are expected to escort Dr. Davis, "the father of the association," to the platform, will also, it may well be supposed, lend dignity and solemnity to the spectacle. All things considered, there can be no doubt, we think, that the meeting will be worthy of the occasion, and nobody, we feel sure, will question the wisdom of two successive meetings having been held in the East.

MINOR PARAGRAPHS.

THE NEW BRITISH DOG ORDER.

According to newspaper reports, the American Kennel Club has become excited over certain restrictions supposed to be imposed on the importation of American dogs into Great Britain after the 15th of next September. It does not appear, however, that the order, issued by the British board of agriculture, discriminates against American dogs, for it applies to those of all countries "except Ireland and the Isle of Man." It seems to us, therefore, that the club need not go to the trouble of proving its assertion that rabies is practically unknown in the United States, especially "by communicating with dog-owners throughout the country."

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 25, 1897:

DISEASES.	Week ending May 18.		Week ending May 25.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	13	2	14	3
Scarlet fever	201	7	169	11
Cerebro-spinal meningitis	0	0	2	0
Measles	270	14	279	9
Diphtheria	286	33	310	41
Croup	6	1	7	2
Tuberculosis	162	75	236	103

The Twelfth International Medical Congress.—The programme of the Section in Laryngeal and Nasal Diseases is as follows: Suppurations of the Nasal Accessory Sinuses (except the Maxillary), their Diagnosis and Treatment, by Dr. E. Moure, of Bordeaux, and Dr. M. Hajek, of Vienna; Cancer of the Larynx, its Diagnosis and Treatment, by Dr. O. Chiari, of Vienna, and Dr. G. Catti, of Fiume; The Causes and Treatment of Loss of Voice in Singers, by Dr. H. Krause, of Berlin, and Dr. M. Lermoyez, of Paris; The Progress made in the Treatment of Laryngeal Tuberculosis since the Last International Congress, by Dr. Ruault, of Paris, and Dr. J. W. Gleitsmann, of New York; Laryngostroboscopy, by Dr. Simanowsky, of St. Petersburg; The Use of X Rays in Laryngorhinology, by Dr. I. Macintyre, of Glasgow, and Dr. J. Mount Bleyer, of New York; Œsophagoscopy, by Dr. V. Hacker, of Innsbruck; and The Adaptation of Photography to Laryngology, by Dr. T. R. French, of Brooklyn, and Dr. Flatau, of Berlin.

Changes of Address.—Dr. Lewis R. Morris, to No. 60 West Fifty-eighth Street, New York (Glenwood Springs, Colorado, during July, August, and September); Dr. L. A. Weigel, to No. 209 East Avenue, Rochester, N. Y.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 16 to May 22, 1897:*

ADAIR, GEORGE W., Major and Surgeon, is granted leave of absence for one month, to take effect May 24th.

CARTER, EDWARD C., Captain and Assistant Surgeon. The leave of absence granted him is extended two months.

FAUNTLEROY, POWELL C., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Niobrara, Nebraska, to take effect upon the arrival at that post of WALES, PHILIP G., Captain and Assistant Surgeon, and ordered to Fort Robinson, Nebraska, for duty.

GARDNER, EDWIN F, Major and Surgeon, is granted leave of absence for three months, to take effect on or about June 15th.

LYNCH, CHARLES, First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Robinson, Nebraska, to take effect upon the arrival at that post of FAUNTLEROY, POWELL C., First Lieutenant and Assistant Surgeon, and ordered to Fort Sheridan, Illinois.

MCELDERRY, HENRY, Major and Surgeon, is granted leave of absence for one month, to take effect on or about June 24th.

WARE, ISAAC P., Captain and Assistant Surgeon, is relieved from duty at Madison Barracks, New York, and ordered to Fort Grant, Arizona, for duty.

WATERS, WILLIAM E., Lieutenant Colonel and Deputy Surgeon General, will be relieved from duty at Columbus Barracks, Ohio, on July 15th, and will then proceed to his home, where, at his own request and for his own convenience, he is authorized to await retirement.

WOODRUFF, CHARLES E., Captain and Assistant Surgeon, is relieved from duty at Fort Sheridan, Illinois, to take effect June 1st, and ordered to Fort Custer, Montana, for duty.

Promotions.

To be Assistant Surgeons with rank of Captain after five years' service, May 5th:

BREWER, MADISON M., First Lieutenant and Assistant Surgeon;

DE SHON, GEORGE D., First Lieutenant and Assistant Surgeon;

MCCULLOCH, CHAMPE C., First Lieutenant and Assistant Surgeon;

REYNOLDS, FREDERICK P., First Lieutenant and Assistant Surgeon;

WARE, ISAAC P., First Lieutenant and Assistant Surgeon;

WOODSON, ROBERT S., First Lieutenant and Assistant Surgeon.

Society Meetings for the Coming Week:

TUESDAY, *June 1st:* American Medical Association (first day—Philadelphia); Indian Territory Medical Association (first day—South McAlester); New York Neurological Society; New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Columbia (semiannual—Chatham), Franklin (semiannual), Herkimer, (quarterly—Herkimer), Niagara (annual—Lockport), Saratoga (annual), and Yates (annual), N. Y.; Hudson (Jersey City) and Warren (annual), N. J., County Medical Societies; Androscoggin, Maine, County Medical Association (Lewiston); College of Physicians of Philadelphia (Section in Otology and Laryngology); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *June 2d:* American Medical Association (second day); Maine Medical Association (first day—Portland); Indian Territory Medical Association (second day); New York Academy of Medicine (Section in Public Health); Harlem Medical Association of the City of New York; Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Maine, County Medical Society (Bangor); College of Physicians of Philadelphia; Bridgeport, Connecticut, Medical Association.

THURSDAY, *June 3d:* American Medical Association (third day); Rhode Island Medical Society (Providence); Maine Medical Association (second day); New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *June 4th:* American Medical Association (fourth day); Maine Medical Association (third day); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

SATURDAY, *June 5th:* Manhattan Medical and Surgical Society, New York (private); Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

GOHEEN — BENHAM. — In Honeoye Falls, N. Y., on Wednesday, May 19th, Mr. Arthur J. Goheen and Miss Mary A. Benham, daughter of Dr. Benjamin H. Benham.

LESCALE—MAURICE.—In New Orleans, on Wednesday, May 19th, Dr. J. Fernand Lescale, of Paincourtville, Louisiana, and Miss Florence Maurice.

Otto—Geuder.—In Milwaukee, on Wednesday, May 19th, Dr. John H. Otto and Miss Belle Geuder.

Died.

Cotting.—In Roxbury, Massachusetts on Saturday, May 22d, Dr. Benjamin E. Cotting, aged eighty-eight years.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of March 10, 1897.

Dr. Adolph Rupp in the Chair.

Syphilitic Osteitis of the Humerus and Femur.—Dr. Charles J. Proben presented the case of an infant with the above-named disease. The patient, aged eleven months, demonstrated an interesting pathological condition, and was interesting from a diagnostic point of view. It was a foundling and the mother dead, so no family history could be obtained, save that the infant had been wet-nursed until nine months of age, when it had been given to another nurse to bring it up by bottle feeding. When it was transferred to still another nurse, she had immediately noticed the swelling of the arm and leg and had brought it to the speaker two months ago. Besides this swelling there had been a great deal of pain when the child was lifted, with an aggravation of it at night-time, when the little one would cry and whine all night. Night-sweats had been noticed about the head, which still persisted. The digestion had been good; the bowels regular; no history of snuffles or skin eruptions. How long the swelling of the extremities had existed he had been unable to ascertain. On examination, two months ago, the following condition had presented itself: A child well nourished, with good muscular development both of trunk and extremities. The head showed a scant growth of hair; anterior fontanelle normally open; no craniotabes; dentition slightly retarded, though no discoloration or notches were present; the labial mucous membrane showed two plaques with a gray base, one small and the other larger. There was slight glandular enlargement, especially of the inguinal and the suboccipital. No osseous changes could be found that might be attributed to rhachitis. Two marked swellings were found distinctly discernible near the knee and elbow joints. Touching them elicited a great deal of resistance, hard in character, and had given much pain. The tumor above the left elbow joint was hard and fusiform in character; it was apparent that it was not in the muscle, but originated in the bone, of a much greater diameter, about double that of the normal humerus above it. There was restricted motion, which seemed to be due to the pain. This tumor took in the lower sixth of the humerus, was near the elbow joint, was very hard, and had the resistance of bone, excluding anything which might be due to muscular enlargement. The femur presented a similar tumor, more prominent than that in the arm, and apparently of the same character. No other bone changes could be found. He had carefully searched for the cause, but had been unable to find any. No signs due to rickets or rheumatism could be found. Also he thought of the subperiosteal hæmorrhages found in scurvy of children, but no evidence of this disease existed. The only alternative he had was to attribute it to syphilis, as mucous plaques existed, and the general adenopathy and syphilitic treatment alone could determine the result, and a rigorous course was instituted. At first one-fifth-gramme doses of mercury with chalk, with frictions of oleate of mercury, had been used, and in a week's time he had seen a change. The pain had become less at night, tenderness had diminished, and the general condition had improved. After two weeks of this treatment the iodide of potassium, three grains three times a day, and a twenty-fourth of a grain of bichloride of mercury had been well borne. A gradual diminution in the size of the tumors had occurred, so that at the end of two months they had fully diminished to one fourth their former size. The pains, which could be attributed to a periostitis, were relieved, and the motion was far freer than it ever had been. Some thickening was still apparent in the femur, and more in the humerus, which showed a local eczema due to the mercurial frictions. That the condition was a congenital one there could be no doubt, probably starting from the epiphyses and involving the shaft of the bones, very rapidly distending the periosteum, which accounted for the pains. True, the history and many interesting points were blank, but the therapeutic test decided the diagnosis. It was apparent that the necessity for the recognition and an early diagnosis called for a rapid therapeutic effect, when we realized the disturbances which might occur from a separation of the epiphysis or a probable suppuration breaking into the joints, with its resultant consequences. At least, we could not always be certain of our diagnosis, but a rapid therapeutic effect of the mercurials was so decided in its results that a future course was clear sailing.

Dr. Walter L. Carr said that the case seemed like a syphilitic condition, and the history being vague, Dr. Proben was justified in using syphilitic treatment; yet, in view of the fact that the child was boarded, it would be advisable to make a change of diet and give more fresh food. He had seen syphilitic cases, when one could be sure of syphilitic origin, do better under a change of diet than when inunctions were given and no attention was paid to dietetic treatment.

A New Treatment for the Removal of Fibromas, Warts, etc., by Electrolysis.—Dr. George T. Jackson showed an instrument he had devised that might be of interest to the general practitioner as well as to the dermatologist. All had met with cases of little fibromas, or warts, that were annoying on account of their looks. In removing them with acids, if too much acid was used there was apt to be a bad scar. Salicylic acid would remove them, but it was a slow process. The speaker had formerly used an ordinary needle with electrolysis. Lately he had taken a very fine knife used by ophthalmic surgeons, had had it cut off from the handle and fitted into his needle holder. It had worked like a charm. It was passed under the base of the growth, a current of three or four milliampères was turned on, and with a little pressure on the knife the growth was cut off without the least loss of blood. The deep parts were not injured if the operation was done carefully, and a scarcely perceptible scar was left.

Appendicitis.—Dr. George H. Mallett exhibited an appendix which he had removed that he thought might be interesting, because the symptoms of the disease of the appendix had been masked. It had occurred in a gynæcological case in which he had operated two years before for double pyosalpinx, removing both ovaries and tubes. Two months ago he had seen the patient in consultation with the family physician, a member of this society. She had complained of intense pain in the left iliac region, and upon examination a large mass had been found there. A diagnosis of intraligamentous cyst had been made. An opening had been made in the *cul-de-sac* and the cyst had been tapped, broken open, and its contents evacuated of about a pint and a half of thin, chocolate-colored fluid. The cavity had been packed thoroughly with gauze, and a small portion had been removed each day. The patient had had no rise in temperature and no reaction from that operation; and on the sixth day but a small portion of the gauze had remained in the cavity of the cyst; this he had expected to remove the next day. That night he had been summoned to the patient and had found her in a state of collapse. There had been symptoms of intense prostration, clammy skin, and profuse perspiration, and the pulse could hardly be counted. It had looked as if she were going to die. That night strychnine, nitroglycerin, and external heat had been applied. The next morning she had rallied somewhat, but the cause of the shock could not be determined. She had been extremely low, her knees had become drawn up and her abdomen tympanitic, and she had had all the symptoms of acute general peritonitis. The speaker thought he had infected the cyst in some way, and that it had broken into the abdominal cavity. She had continued to improve, her pulse got better, and in four days the pain was located on the right side in the region of the appendix. On the fifth day the speaker had operated and had found a large abscess, and after considerable difficulty he had removed the appendix. The appendix had been of a very dark color, and so had the cæcum. He had invaginated the stump of the appendix, and used catgut in the usual manner. Drainage by means of iodoform gauze rolled in rubber tissue had been employed. Her temperature had gone down immediately after the operation from 103° to 99° F. On the third day an enema had been given. This had been followed by a slight result. The next enema, given the day following, had come through the wound into the bed. This had been followed by the contents of the bowel. By almost continuous irrigation for several days the fæcal fistula had healed up entirely, and the patient had now recovered. The case was interesting because there had been nothing in the symptoms to lead one to believe that there was appendicitis until an abscess had formed. She had absolutely no rise in temperature until the state of collapse occurred.

Dr. Carr asked about the method of treating the stump of the appendix, as apparently Dr. Mallett had departed from the usual routine.

Dr. Mallett said that he had invaginated the stump of the appendix, but it had been so soft and gangrenous that it would not hold the stitches, so he had not attempted to sew it to the peritonæum.

Dr. D. E. Walker asked if the pain had been on the left side.

Dr. Mallett said that it had been, that the cyst had been on the left side, and he thought that it came from that.

Dr. Walker said he thought these cases of appendicitis, where there was no pain referable to the region of the appendix, frequently occurred. He spoke of a case that he had reported to the society where all the pain the man had had had been about the ensiform cartilage. He had seen one case in a woman who had had symptoms of general peritonitis, and he had assisted at the operation. She had had symptoms of general peritonitis, with general pain in the pelvic region, and on opening the cavity, which had been done in the median line, fully a pint and a half of pus had gushed out. A long suppurating appendix had been found in the median line and tied off. The cavity had been thoroughly washed out and drained with iodoform gauze and a glass tube, and the woman had recovered. The same woman several years later had had an attack of vomiting suddenly, and, owing to circumstances, had not been operated on immediately. When she was operated on, a very large portion of the intestine had become strangulated by a constriction, and she had finally died after the operation.

Dr. Mallett asked what the indications had been for incision in the median line.

Dr. Walker said the patient had had symptoms of general peritonitis without any reference to the appendix, and the opening had been made in the median line below the umbilicus, as the trouble had seemed to be there.

Dr. Mallett asked if anything had been found by vaginal examination.

Dr. Walker said that nothing very definite could be made out. There had been an indistinct mass rather high up in the pelvic cavity.

Dr. Mallett said that in the case he reported nothing had been found by vaginal examination.

Dr. Walker said that the vaginal examination under ether had left the diagnosis in doubt as to whether the trouble was pelvic or whether it was appendicitis. Appendicitis had been suspected, but there had been no special reason to suppose it was appendicitis outside of the general symptoms.

The Chairman said that the specimen presented by Dr. Mallett and its history were interesting and instructive, and in connection with the case narrated by Dr. Walker, the difficulty of diagnosticating clearly and definitely cases of appendicitis was plainly demonstrated. These cases also made evident what the body could stand. He had recently had a case of acute general peritonitis, which had been accompanied by probable cancerous disease of the pelvic (female) organs. No positive diagnosis of appendicitis had been made, although it had been suspected. An abdominal specialist had been called in, but he had agreed in considering an operation of no avail. Pleuro-pneumonia had also complicated the case five days before death. The surgeon had made a diagnosis of appendicular trouble. From what one heard, it would seem that surgeons were not all of them in such a hurry to operate for appendicitis as was the case some years ago. However, when localized abdominal symptoms—pain, colic, etc.—persisted, or a localized peritonitis showed a tendency to spread, the general practitioner ought to call in the abdominal surgeon.

(To be concluded.)

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-third Annual Meeting, held in Washington, on Tuesday, Wednesday, and Thursday, May 4, 5, and 6, 1897.

The President, Dr. M. Allen Starr, of New York, in the Chair.

The President's Address.—In his address the President referred to the transmission of sensory impulses through the spinal cord, and thought that the conclusions derived from physiological experiments upon the lower animals were open to grave criticism, first, because of the fact that the majority of such experiments performed years ago were done without antiseptic precautions and were attended by secondary septic inflammations of the cord and its meninges which invalidated the conclusions drawn from them; and, secondly, because of the great variation in the anatomical structure of the cords of the lower animals and that of man. While investigations had abundantly confirmed the general results long known as ascending degeneration in the spinal cord, after lesions of the nerve roots and after lesions of a transverse nature, the recent methods of investigation, especially the staining methods of Weigert, Van Gieson, and Marchi, had furnished some interesting results. It was no longer possible to speak of the columns of the cord as being exclusively ascending or descending in the direction of their fibres. Recent investigations by Hoche had shown the existence of many association fibres of limited extent in the direct cerebellar columns and in the columns of Gowers, and therefore it seemed evident that every column of the cord contained fibres which passed in both directions. It was thus proved that the number of the short tracts in the cord was far greater than the number of long tracts, and, inasmuch as these short tracts could only be nerve roots, or else tracts of association, it was evident that there were but few very long fibres extending through the cord to the brain. Many of these long fibres, supposed to reach the brain, really terminated in the spinal cord itself. There was no tract passing directly from the cord to the brain cortex. Even if the lemniscus was continuous from the medulla to the cortex, it could not be stated that the lemniscus formed a direct sensory tract from the cord to the brain, since it began in the nucleus gracilis and nucleus cuneatus of the medulla. A sensory impression of sufficient severity, or if continuous, might practically throw into activity almost the entire subcortical nervous system. It therefore seemed quite evident that the transmission of sensations through the cord must have for an anatomical basis a series of short neurones, each conveying the impulse from the level of its reception in the cord to a level somewhat higher, where again it was transferred to any other neurone, and so on till it reached the cortex. Was it not, therefore, evident that in the transmission of sensation through the spinal cord, cerebral axis, or brain, we had to consider the tracts as different in their structure from those conveying motor impulses, and as consisting of a series of short neurones closely connected, but with very numerous and widespread connections? Was it not probable that the result of this arrangement was to secure a diffusion of single sensations to various reflex, vasomotor, trophic, and automatic mechanisms, as well as to the organ of conscious perception? And was it not also evident that this view of sensory diffusion explained the apparent inconsistency at present prevailing between the clinical symptoms observed in Brown-Séquard paralysis and the pathological degenerations occurring in that disease? He concluded that in the conduction of sensory impulses to the brain cortex a large number of different neurones were concerned, which were located in the gray matter and in all the various columns of the spinal cord, and that there were no true sensory columns or long continuous sensory tracts between the spinal cord and the cerebral cortex.

Anæsthesia in Spinal Diseases.—Dr. P. C. Knapp, of Boston, read this paper. He referred to the researches of Ross, Thorburn, Starr, and others. In syringomyelia the distribution of the anæsthesia was more apt to follow another type than in cerebral disease, in which the boundary of the anæsthesia was at right angles to the axis of the limb. Two cases were reported, and many others cited proving this distribution.

Dr. B. Sachs, of New York, referred to cases of spinal origin, which did not seem to be of spinal type, but which he had good reason to believe to be cases of a syphilitic affection of the cervical region of the cord. This type closely resembled syringomyelia. He did not like the term "cerebral anæsthesia," but preferred "regional anæsthesia."

The President said it was practically impossible to lay down an accurate diagram of the anæsthesias from various regions of the cord. Individual variations must be considered and admitted. Irregularity in distribution was characteristic of spinal anæsthesia.

Primary Idiopathic Hydrocephalus in Adults.—Dr. Morton Prince, of Boston, reported three cases, with autopsies, besides two others which had terminated in recovery. The first case followed trauma and simulated latent abscess with secondary meningitis of the base. Trephining was done with negative results. At the autopsy the ventricles were found dilated to three times their normal size, the convolutions flattened, and the sulci almost obliterated. The same condition was found in the second case. The third case followed sunstroke and was of the external variety, the meshes of the pia and arachnoid being filled with fluid so as to resemble a layer of jelly. There were an acute and a chronic form. The acute simulated the purulent form of meningitis, but differed from it in its course and the variability of the symptoms. The chronic simulated and was usually mistaken for cerebral tumor. The affection was common, but not usually recognized.

Dr. Joseph Collins, of New York, felt certain that there were chronic conditions of this affection. He cited a case which presented all the characteristics of hereditary cerebellar ataxia, in which at the autopsy only ventricular distention was found.

The President asked Dr. Collins if a microscopical examination had been made of the brain or cord and was answered in the negative.

Dr. Sachs said that as the examination was incomplete, Dr. Collins's conclusions should not be accepted as final.

Dr. P. C. Knapp, of Boston, said that the reader of the paper had omitted to speak of lumbar puncture in the diagnosis between meningitis and effusion. The negative findings were often important.

Dr. Prince said that unquestionably there was a chronic form. The principal distinguishing point was in reference to the variation of symptoms from time to time in effusion.

Subarachnoid Serous Exudation Productive of Pressure Symptoms after Head Injuries.—Dr. G. L. Walton, of Boston, read a paper with this title, and said that in cases offering moderate febrile movement, prolongation of unconsciousness, and restlessness after injury, it was of no vital moment whether we adopted the term contusion, bruising, or laceration; but when to these symptoms local paralysis was added, the question of operation arose and exact ideas of the pathology became important. An operation over the area indicated sometimes showed only a tense dura, incision of which was followed by a gush of serum. Under the arachnoid membrane the greater part of the cortical cerebro-spinal fluid was collected. Serum might be exuded into the subarachnoid space as well as transuded, and sometimes the swollen and congested brain found under the fluid on operation showed that we had to do with an exudation resulting from increased blood pressure, rather than with a compensatory process. Little attention had been paid to this process. The œdema of Ballard accompanying hæmorrhage was analogous; the serous meningitis of Quincke was analogous if not identical, in so far as he included external meningitis, but he did not refer to this class of cases. The following cases were mentioned: A boy of six years was struck by a bicycle at noon one day, was restless and drowsy, and on the following day became unconscious, with unilateral paralysis including the face. An operation was considered, but postponed. The paralysis had disappeared within four days. A child, three years and a half old, fell from a swing, striking the head; it was drowsy, and the next day one arm was paralyzed. The paralysis began to lessen on the third day, and rapidly disappeared. A young woman fell, striking the head violently. Unconsciousness, restlessness, vomiting, and hemiplegia appeared. An operation revealed a tense dura, incision of which was followed by a gush of serum. There was relief of pressure symptoms, but death ensued from the underlying condition. The author's conclusions were: 1. A severe blow may result in local bruising and congestion with subarachnoid serous exudation. 2. The fluid may be imprisoned and cause focal paralysis. 3. The process is not compensatory, and is allied to the serous meningitis of Quincke. 4. The lesion is self-limiting. 5. The diagnosis from hæmorrhage is difficult. An atypical course, absence of steady increase of symptoms, and persistence of sensitiveness point to serous exudation. 6. An immediate operation is not necessarily indicated in focal paralysis, though perhaps always justifiable. 7. This condition is especially to be borne in mind before operating on children and young adults.

Dr. J. J. Putnam, of Boston, had seen several cases in which such a diagnosis could be borne out, but there was shifting of symptoms, which was important. He had witnessed an autopsy on a woman who after influenza had localized twitching of the arm, leg, and face every twenty minutes; twenty-four hours later there were hemiplegia and rise of temperature. There were only œdema and a wet, soft brain. There was no local accumulation under the pia. He thought the convulsions and hemiplegia were due to the general œdema. The pathology in these cases was not clear. He had seen venous hæmorrhage into the pia which was accompanied by hemiplegia.

Dr. Joseph Collins, of New York, related the case of a man, fifty years of age, who fell and struck his head in the left parietal region. This was followed by shock, stupor, and paralysis of the right upper extremity. At the autopsy there was some localized serous exudation, which was evidently of inflammatory origin.

Dr. Hugh T. Patrick, of Chicago, added a case almost exactly like that of Dr. Prince. A child received a fall, which was not severe, in the latter part of the afternoon, after which he played about as usual. At the supper table he suddenly let fall a fork from his right hand, and soon thereafter had a one-sided fit. Following this he became stuporous, and when seen several hours later was almost comatose; but a distinct hemiplegia was made out. An operation was declined by the family, and two days later the child was absolutely well. A localized œdema was the only possible explanation of such an occurrence.

Dr. Edward Angell, of Rochester, asked Dr. Walton if there was any temperature record, to which he replied that there was slight rise of temperature.

Dr. C. A. Herter, of New York, believed that local effusion could give rise to these symptoms, and spoke of a case of extreme general œdema of the arachnoid following syphilis. There was some doubt as to whether the fluid was a simple effusion or an exudate. An inflammatory process, however, could not occur so rapidly. It might possibly be due to cerebral anæmia. Pronounced general œdema of the brain in children might be unaccompanied by any cerebral symptoms.

Dr. W. N. Bullard, of Boston, said that further investigation and study of these cases had confirmed his belief that this condition was the pathological cause of many of the symptoms arising in these cases, and that the presence and degree of this increased intradural pressure were two of the most important factors in determining whether or not operation should be performed. As to how far the symptoms due to this increased pressure within the dura, when localized in the form of paralysis and hemiplegia, were to be considered as indications for surgical interference had not yet been fully determined.

Dr. Morton Prince, of Boston, thought the theory of Dr. Walton was plausible, but difficult of substantiation, and related the case of a child who had a fall and showed symptoms of meningeal hæmorrhage, such as unconsciousness and hemiplegia. An operation was deferred and the child was perfectly well on the following day.

Dr. B. Sachs, of New York, said the theory was not new. After head injuries three possibilities were to be considered—hæmorrhage, local œdema, and purulent meningitis. The view of Dr. Walton was natural and plausible, and he agreed with him in his views as to the diagnosis. He would not operate on the skull too soon, but would wait until he was positive of serious damage to the brain, not until after the lapse of forty-eight hours or several days.

The President thought that the question of localized œdema should be one of fact and not of theory. He had seen three patients operated upon in whom apparent inflammatory œdema was found. He had also observed a case in which there was a very large amount of œdema involving the entire hemisphere around a very small tumor.

(To be continued.)

Miscellany.

Lycetol in Diseases of the Urinary Organs.—Dr. P. Hamonic (*Revue clinique d'obstétrique et de gynécologie*, March 13, 1897; *Praktischer Arzt*, 1897, No. 4; *Wiener klinische Rundschau*, May 9, 1897) says that lycetol, a tartrate of dimethylpiperazine, acts in the main like piperazine, but, according to his observation, has a number of advantages over that substance, especially that of not being hygroscopic and that of being very easily handled. It may be employed and kept in powder or in solution; it has an agreeable taste, whereas piperazine is bitter. The author has previously reported on the action of lycetol in gout, rheumatism, and arthritic processes of all sorts, and in the present communication he limits himself to his experience with it in diseases of the urinary passages and organs. In these affections also it has shown itself a most energetic solvent of uric acid and the urates; in this respect it is almost seven times as powerful as lithium. At the same time it acts decidedly as a diuretic, and the author does not ascribe this entirely to the tartaric acid contained in it, for the use of the acid alone is not marked by an approach to the effect of the employment of lycetol. He believes, however, that the diuretic action of the tartaric acid is added to that of the piperazine.

He has recently treated six cases of urinary lithiasis with lycetol, including one particularly severe case in which nephrotomy had been under consideration. After fourteen days' exclusive treatment with lycetol, a calculus was passed and a definitive cure resulted. It has been only rarely that he has found it to fail to moderate the intensity of renal colic in the course of a comparatively short time. He has been particularly struck with the prompt subsidence of every morbid property of the urine after a stone has been voided; he has never seen any other remedy give such rapid and lasting relief. In three patients with the uric-acid diathesis who had persistent lumbar pains he has known the brick-dust deposit, which had resisted all preparations of lithium, to disappear after a few days' use of lycetol.

But the author warns the practitioner against the error of supposing that the use of lycetol can bring about the solution of a renal calculus of any considerable size, especially one of the mixed sort containing a considerable proportion of calcareous salts. On the other hand, he has seen it prove valuable in the after-treatment of a case of nephrotomy for calculous pyelitis. It is directly contraindicated in cases of phosphaturia; the author has observed that it increases the excretion of phosphoric acid and gives the urine a green color.

In sixteen cases of purulent cystitis he has observed a favorable action of the drug on the suppuration, but in one case of a tuberculous nature, with hæmorrhages, the effect was less pronounced. In these cases he prefers it to salol, which he employed previously, especially as it retards the decomposition of the urine. In gonorrhœa, lycetol is effective only in the very acute stage; the author has observed six cases in which rapid improvement took place under its use. In a case of stricture of which the only symptom was a very slight non-purulent discharge, occurring in a neurasthenic patient, it caused the disappearance of the discharge in a most unexpected manner.

Latterly the author has been using lycetol in the treatment of diabetes, and has witnessed a more favorable effect than he formerly observed from a combination of arsenic with lithium carbonate. He gives fifteen grains of lycetol and 0.15 of a grain of sodium arsenite daily. He particularly recommends an effervescent form of lycetol. He has never seen any injurious effects of the drug.

The Ætiology of Acne.—Dr. Albert E. Carrier, of Detroit (*American Journal of Dermatology and Genito-urinary Diseases*, April, 1897), thinks that any physician who has had a considerable number of cases of acne under his care will bear him out in the statement that a large proportion of these cases occur in individuals in whom the closest scrutiny has failed to discover any other pathological condition. The disease, he says, is the most frequent in occurrence of all dermatological affections, and yet comes less often under the care of the physician than other skin diseases whose occurrence is much less frequent. Probably not more than twenty-five per cent. of the cases are treated. The reasons for this lack of treatment are twofold. First, the occurrence of many cases among the poorer classes, where the lack of the desire for the removal of the affection for cosmetic purposes, the absence of subjective symptoms, and the enjoyment of good health are reasons for not consulting the physician. Second, there is the belief of the laity, which to a certain extent is shared by physicians, that the physiological activity of the period of puberty is responsible for the disease, and that treatment is of no avail, the disease disappearing when the functions of adult life are established. He can see no reason why the processes of growth and development should be held responsible for a pathological condition that is so frequently met with as acne. There are thousands of individuals, he says, that pass this period of life without any affection of the sebaceous glands whatever. The period of puberty is the time when we should expect the individual to be in the best of health. It is a time of life in which there have not been developed habits of living which, coming later, stamp themselves upon the economy in various pathological conditions that are predisposing causes of many cutaneous outbreaks. When the sebaceous glands pour out more sebum than is necessary for the maintenance of the hairs and skin in health, or when there is an alteration of the chemical composition of the sebum, rendering it irritating, or when the sebum by an alteration of the proportion of its elements is too hard for expression, or when the expressing apparatus is unable to empty the glands as fast as the sebum is formed, a seborrhœa or acne may follow, but these are pathological conditions occurring at this period of life. The causal relation of diseases of the stomach or bowels, or of the generative organs, or of the circulatory apparatus is more probable, at least as predisposing causes. The use of alcohol as a beverage, or the immoderate use of tobacco, or the ingestion of certain medicinal substances may be the cause of an outbreak of the disease, or their continued use when the acne is once established will add greatly to its chronicity. Other causes of the disease are certain occupations, work in chemical laboratories, or in the manufacture of tar, or in foundries, or in seed warehouses, or in silver-plating establishments, etc., and to these may be added too frequent shaving, handling of the parts, and the use of cosmetics. There are two causes which are the active agents in the development of acne lesions. One is the retention of the sebum in the gland by obstruction of its duct or change in its composition, and the other is the invasion of the gland contents or structure by germs. The obstruction to the outflow of sebum may be due to an increased corneification of the epidermal cells lining the hair follicle and duct of the sebaceous gland, blocking it completely. The gland being still active, the sebum is constantly increased in amount behind the obstruction, and from distention of the gland walls a pressure irritation results that ends in an acne lesion. The same condition occurs when the sebum is formed too hard for expression, or when the expressing apparatus is unable to empty the gland. The most frequent cause of the two agencies is the germs. It is not necessary to hold a special germ responsible for all attacks of acne; several different germs will be found in any examination of sebaceous-gland contents, either of which under proper conditions may be the cause of the acne lesion. Some of these germs reach the parts through the circulation, while others attack the gland from the surface, and the resulting pustule is either deep-seated or superficial. Not all acne lesions are pustular, however; some never become so throughout their whole career, but remain as indurated nodules. These lesions are the result of pressure inflammation without the addition of pus-producing bacteria. A further evidence that acne lesions are due to local causes is found in the fact that the disease occurs oftener upon the face than upon any other part of the body, while some other parts of the skin are better supplied with sebaceous glands than the face is, but those parts are not so exposed, being covered by the surrounding clothing. Acne is an inflammation of the sebaceous glands and surrounding structures, with the formation of papules, pustules, or nodules, the lesions being few or many, most frequently occurring upon the face, and attended by but slight subjective symptoms. The predisposing causes of the disease may be any of the pathological conditions mentioned, but predisposing no more to acne than to any other cutaneous affection. The active agents in causing an outbreak are local irritations or germ invasion. Neglect of treatment or improper treatment may give rise to disfiguring deformities.

Two Surgeons and their Fees.—Alfred Louis Velpeau, the greatest French surgeon of his time, says the *Indian Medical Record*, had a severe lesson read to him by the mother of a patient, a young girl whose life he had saved in a critical case of croup. The mother, brimming over with gratitude, went to see the famous surgeon, an abrupt and somewhat disagreeable person at the best of times, and reputed to be afflicted with inordinate greed. "I have come to thank you for what you have done for us, and to offer you this as a token of our obligation," she said, placing a beautifully embroidered purse on Velpeau's table. Velpeau scarcely took the trouble to look at it. "I accept, madame," he remarked in his ungracious way; "but, of course, this is without prejudice to my honorarium, which comes to three thousand francs." Thereupon the lady took up her present. "I am afraid I made a mistake, then," she laughed; "there are five notes of one thousand francs each in there. This makes us right, then, monsieur." And pocketing two out of the five slips of blue paper, she bowed, "I have the honor to wish you good morning." Sir Astley Cooper was wiser in his generation. The largest fee he ever received was in a less delicate but more original manner. He had been attending in his capacity of surgeon a West Indian millionaire, named Hyatt, with Dr. Lettsom and Dr. Nelson as physicians. The treatment was most successful, and in his joy Hyatt bestowed three hundred guineas on each of the doctors. "But you," exclaimed the grateful patient, addressing Sir Astley, "you shall have something better." With this he flung his nightcap at the eminent operator. "Sir," replied the latter, "I'll pocket the affront." And he slipped the "affront" into his pocket. It contained a draft for one thousand guineas.

Metrorrhagia in Measles.—In the *Gazette de gynécologie* for May 1st, M. E. Depasse gives an account of the cases of two young women who were attacked with grave metrorrhagia during measles. The author was all the more struck by the appearance of the metrorrhagia in these two cases as he had never observed a similar occurrence during an experience of twenty-five years, and he was led to make some researches on the subject, with the following results: In an article on measles by M. A. Sanné, in Dechambre's *Dictionnaire*, the author remarks that the hæmorrhages which occur most frequently are from the skin, the nose, and the kidneys; those from the uterus, the intestine, and the stomach are rarer. The blood rarely comes from one source only, for when there are cutaneous lesions very copious epistaxis may be observed at the same time, and occasionally metrorrhagia.

Leucorrhœa, according to the same author, is not very rare during measles in strumous subjects, and the catarrhal inflammation which causes it easily becomes transformed into gangrene. Menstruation also is sometimes seen during an attack of measles. It is not rare to see it occur occasionally during the premonitory symptoms, even when they have appeared several days before, and it is more abundant than during the normal condition. Moyssier, he says, cites the case of a young girl in whom menstruation occurred for the first time during convalescence from an attack of measles.

Gehrard and Gautier state that pregnant women are exposed to the greatest danger from measles, although during the latter days of pregnancy the danger is not so great.

M. d'Espine scarcely mentions the subject, and Trousseau, Guéneau de Mussy, and Peter do not speak of it at all.

There is nothing surprising, however, says M. Depasse, in the fact that a general infection should exercise a remote influence upon the uterus, although such cases are evidently rare.

Regarding treatment, M. Depasse states that in the first case he tried in vain to combat the hæmorrhage with cold drinks and ergotine; the eruption put an end to it, for, as soon as it was fully established, the flow of blood was arrested. M. Depasse is all the more convinced that it was the eruption which arrested the hæmorrhage inasmuch as in the second case he paid no attention to the metrorrhagia, but tried to hasten the morbillous eruption by the administration of hot drinks and ammonium acetate, and he states that he had no reason to regret this method of treatment.

Acute Melancholia occurring in a Child.—The following interesting account of a case which came under the observation of Mr. Ray, of the West Riding Asylum, Wadsley, is published in the April number of the *Quarterly Medical Journal for Yorkshire and the Adjoining Counties:* The patient, a girl fourteen years of age, was admitted into the asylum on May 19, 1896. She was restless and cried constantly; she had a very vacant expression and seemed to be in constant fear, and was under the delusion that she would be set on fire. This condition had existed for twelve weeks without any apparent cause. She was not epileptic, suicidal, or dangerous.

The patient had always been a delicate child from birth. The first symptom noticed was that her memory was becoming defective; she forgot simple facts and could no longer remember information received at school, and finally ceased to be able to read and write. Her temper became very violent and uncertain, and her whole disposition seemed to be changed. She refused her food and lost flesh rapidly. She was dirty and untidy in her habits. Frequently she cried out as if in fear, saying she was "all in a blaze."

Owing to the mental condition, the physical examination, says Mr. Ray, was very unsatisfactory. Her general condition was that of a spare, pale, very emaciated child, with light hair and bluish complexion. The skin was transparent, with the veins showing through. The abdomen was protuberant. Both tibiæ showed marked bowing from rickets. The arch of the palate was wide, and the eyes were placed well apart. On examining the chest a slight dullness was made out at both apices, with a few sibilant râles. The tongue was furred and the bowels were constipated. Menstruation had not begun, and there were none of the signs of the onset of puberty.

The patient's expression was one of the most abject misery. Her face was drawn and pinched. The brow was puckered, and the angles of the mouth were depressed. The eyes had a furtive, haunted look, with the pupils widely dilated. She would sit crouched up in a chair, with the fingers of one hand in her mouth, gazing about her in extreme fear and apprehension. At times she wandered aimlessly about, wringing her hands, moaning and crying piteously. Occasionally she tried to speak, and the lips would half form the word, but no sound was uttered. She could not be got to reply to the simplest question. The self-absorption was so great, and the power of attention so far gone, that she failed even to understand the simplest order. In addition she was very wet, dirty, and untidy in her habits.

During the first month after her admission the condition remained much as above described. It was then noticed that she occasionally uttered half-intelligible words of apparently no meaning. If a question was put to her, a transient gleam of intelligence passed across her face, and the lips moved in the effort to reply. About a fortnight later she had an attack of periostitis of the lower jaw, and after her recovery from this the mental condition began very slowly to improve. The self-absorption was not now so marked. On a person's wishing her "good morning" she would often hold out her hand and look into the speaker's face in a puzzled, inquiring manner, and then lapse into her previous state.

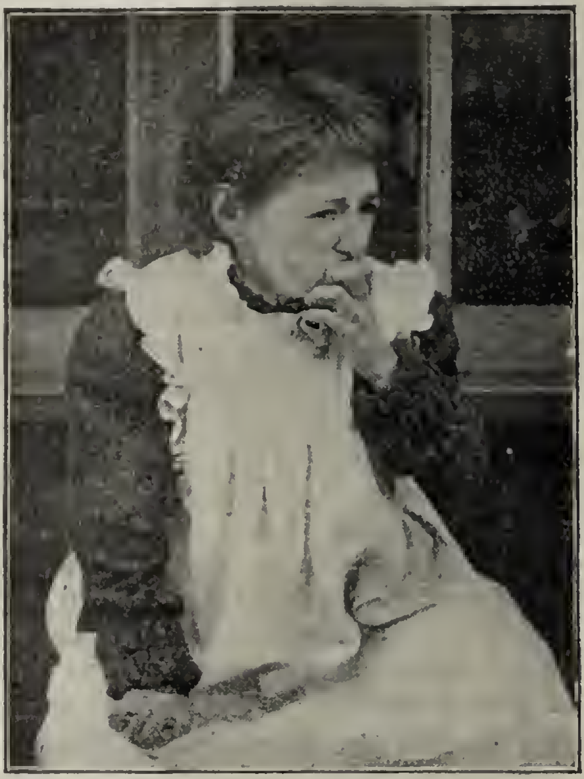
At the expiration of another month, there was a further improvement to record. She had now to a great extent lost the frightened, anxious expression, and could reply intelligibly to simple questions.

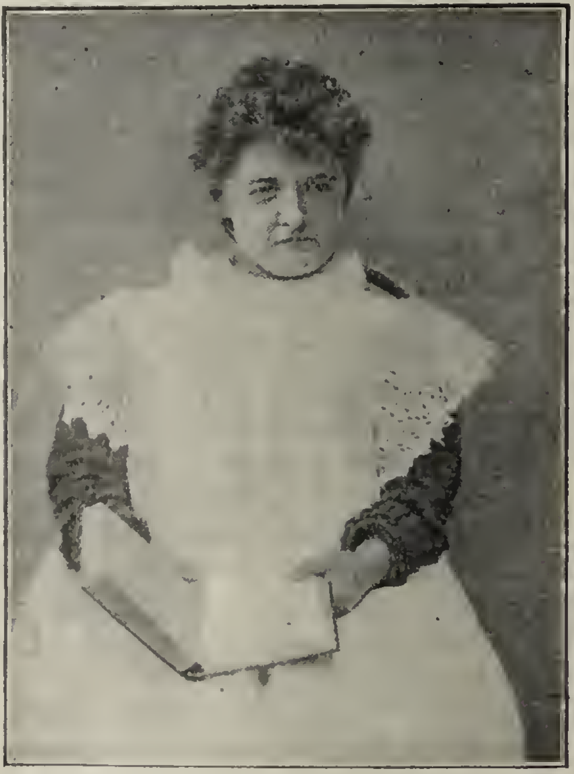
As time went on she seemed to take more and more interest in her surroundings, but did not seem to quite realize her position. Her physical condition was now decidedly improved. She had become cleaner in her habits, and was taking food well and enjoying it. During her progress toward recovery she had strange ideas of mistaken identity. She evidently imagined the nurses and people about her were her relations, and gave their names according to the fancied resemblance. These ideas slowly faded away, and she became much more rational in her conduct. She began to make herself useful about the ward, and was often seen reading fairy tales to the other patients. She wrote intelligent letters, of which a sample is given.

During her stay in the asylum she had two hysterical fits. The first, a severe one, occurred about six weeks before she was discharged, and the second shortly before her leaving. The latter she controlled with an effort, showing, says Mr. Ray, that the power of self-control had improved in the interval. This improvement continued and she developed into a bright, intelligent, active child, always cheerful and anxious to please, and she became a general favorite. She was finally discharged, cured, on October 20, 1896.

Two photographs illustrating the condition before and after recovery are given, which, by the kind permission of the editor of the journal, we reproduce. Mr. Ray thinks that the difference on admission and on discharge will easily be appreciated on looking at these photographs. It is, indeed, somewhat difficult to believe the two are of the same child.

The profound depression, says the author, the self-absorption, the miserable frightened expression, are all characteristic of acute melancholia. The only point to be considered is, he thinks, the question of whether the case was one of pubescent insanity. When the patient left the asylum menstruation had not begun and there were no signs of puberty. As she had not the development of most girls of her age, Mr. Ray thought that menstruation would be late in its arrival, and that consequently he was justified in regarding the case as one of acute insanity occurring in childhood.





He considers the prognosis as regards the attack fairly good, provided always, he says, the patient is not carried off by the extreme debility and lack of nutrition or some intercurrent affection. There is, he thinks, a tendency toward the recurrence of the insanity at some future period.

With reference to treatment, says the author, the question of removal is the first point to be considered, for asylum treatment in this case would not have been at all imperative if the child could have been sent away to the country with a properly trained nurse, because the association of a convalescent with other patients is not to be desired. It is certain, however, he thinks, that in the majority of such cases the patients do much better away from home influences.

Concerning the medical treatment in this case, the child's bodily condition was improved by means of suitable nourishing food, cod-liver oil, and tonics. Tabloids of extract of thyreoid gland also were given twice a day in five-grain doses, and the author thinks great benefit was derived from this treatment.

Another great feature in the management of such cases as this, he continues, is what one might term the mental treatment as apart from the ordinary bodily treatment. The patient in this case was placed under the charge of bright, cheery nurses who endeavored to draw the child's attention from herself and her fears, and to interest her in her surroundings. As she began to improve, efforts were made to rouse her memory as to her home, school life, games, etc., and to interest the child generally as much as possible. She attended the weekly dance, entertainments, etc., as soon as she was convalescent. She was also very fond of music and singing, all of which are great factors for good in the treatment of such cases.

The most interesting feature of the case, apart from its rarity, was the profound melancholia, which is seldom seen in a child. The insanities of pubescence and adolescence generally, but not always, take a maniacal form with considerable perversion of the moral nature. Patients suffering from such insanities are often noisy, excited, and obscene. The palate in this child was not, by any means, the high V-shaped one usually associated with neurotic children. Mr. Ray states that he mentions this fact again as one of the points to be noticed in this case. It is also to be remarked that her general bodily development was backward for her age.

He thinks the occurrence of the periostitis excited a beneficial effect on the progress of the case, and states that he has seen several instances of even chronic insane patients becoming much brighter mentally when suffering from acute disease. It has to be kept in mind, however, that in this particular instance the periostitis had subsided before any marked change was noticed.

Such patients are generally treated at home, if the case is mild, and the author feels sure that if the practitioners under whose care they come were to publish particulars, much might be done to increase our somewhat limited knowledge of the early symptoms, for it is in the early stages that much good can be done, and perhaps the attack be cut short.

The Caffeine Treatment of Heart Disease.—In the *Nord médical* for May 1st, M. G. Lemoine states that for fifteen years he has given caffeine every day to patients suffering from myocarditis, and he feels certain that this treatment has prolonged their lives by avoiding the various discomforts, attacks of oppression, and temporary asystole to which they had formerly been subject.

M. Lemoine gives an account of a case in which, owing to the permanent and prolonged use of caffeine, the patient enjoyed better health than she had had for many years. The author refers to five similar cases, in the most recent of which this treatment has been employed for three years. One case was that of an emphysematous subject with cardiac degeneration in whom this treatment had been instituted seven years ago, and, owing to the influence of the caffeine, he had been enabled to resume his work.

M. Lemoine states that it is not necessary to employ large doses of caffeine in order to obtain these results; on the contrary, he recommends weak doses, and as much as possible doses which vary more or less from day to day. This method has the great advantage of not accustoming the organism to the same dose always; consequently it is possible to continue the use of the drug without increasing the doses.

This method is considered the most logical by M. Lemoine, although, he says, it may be objected to on the ground of accustoming the organism to a drug and of the physician's being obliged to gradually increase the doses until they become excessive. The author thinks, however, that he has answered this objection in presenting the facts themselves of the case referred to. He concludes that the caffeine treatment is indicated in patients who suffer from cardiac weakness due to a disturbance of the pulmonary circulation. He states that he has employed this treatment with admirable results in emphysematous subjects with heart disease.

Children's Diarrhœas.—In the May number of the *Dublin Journal of Medical Science* there is a continuation of an article entitled The Clinical Pictures of Children's Diseases, by Mr. Langford Symes, in which the author deals particularly with the diarrhœas of children. In few subjects, he says, have such rapid advances been made as in the pathology of these affections. Diarrhœa is a symptom only, and usually of disease of the intestine, and of very different pathological states; but in its clinical forms it often assumes the garb of a dreaded and fatal disorder. It very frequently complicates other diseases of infancy and childhood, and in cases of chronic diseases the patients are swept away in two or three days by a sudden and profuse diarrhœa. The old idea, says the author, that diarrhœa was good for children during the teething period increased the deaths in past years.

Unwholesome, improper, excessive, or irregular feeding is responsible for an enormous number of these diarrhœas of children. It may, of course, occur at any period of the child's life, but is most frequent during the first year. It may be a very acute and suddenly violent disorder, and may occur at any time or season of the year. This species of attack, then, forms one large class of cases which is doubtless very familiar to those who have had any experience of children.

When, however, this mechanical irritation is long continued, when this indigestion from errors of diet has become almost habitual, and when the unfortunate child is so placed that scarcely a meal is correctly provided for it, when it grows up sharing the sometimes indigestible fare of its elders, eats forsooth anything with which it may chance to be in contact, then this intestinal indigestion becomes an essentially established condition—a chronic process. The repetition of these errors produces persisting irritation of the intestine, and a wretched state of chronic diarrhœa is established.

It would be useful to find out whether "teething" actually causes diarrhœa or not. At this time children get hold of the most unwholesome things to chew and "cut their teeth on," and in these substances lies the cause of many of the cases we hear of.

It is most remarkable that during times of great distress, as during the siege of Paris, or the Lancashire cotton famine, the infant mortality is largely reduced, while the adult mortality is increased. The explanation is that from the scarcity of food the mothers are compelled to suckle their children, and hence *the* great source of danger is abolished.

Infants' food is very liable to become contaminated. The children of the poor eat the most unwholesome things, and a vast amount of dirt along with them. The fungus of thrush (*Saccharomyces albicans*) is capable of directly producing intestinal disorders and diarrhœa. It is very apt to attack the mouth. This organism is said to decompose milk like the *Bacterium lactis,* and form lactic acid, and, according to some, butyric and formic acids also. Dr. Forbes Ross has directly produced thrush from the sour milk of an unclean jug; also, he has produced it from the fæces of some cases of diarrhœa; but it is a curious fact it was only in cases where the nates were excoriated that he was able to develop this fungus.

Sanitation affects children decidedly; air-space, ventilation, drainage, situation, general home cleanliness, and the water and milk supply.

It has long been thought that the filth and putrefaction of towns, animal exhalations, with atmospheric changes, caused this "summer diarrhœa" among children. Until recently, however, we got no further. How they operated was not fully explained. Dr. J. B. Russell has greatly aided us by his investigations and statistics in Glasgow of deaths occurring from this disorder. He finds that "the death-rate from diarrhœa of children under five years of age is now (1890–'94) exactly what it was thirty years ago (1860–'64), while the death-rate at the age of five years and upward is less by more than one half." Improved water supply, therefore, in Glasgow has not influenced the infantile diarrhœas, though it has lessened by half those occurring in children over five years of age. In fact, the water-drinking school children have been saved, while the milk-fed infants still die in large numbers.

It is in July, August, and September, when the air is very hot, and decomposition is going on in organic materials, that this summer diarrhœa is most prevalent and that its mortality is highest.

In two thousand cases of death among children from this cause * it was found on investigation that only three per cent. were breast-fed, revealing a most extraordinary immunity among infants nursed by their mothers. These diarrhœas, therefore, are found to affect artificially fed children.

In cases of summer diarrhœa the intestinal contents are found to swarm with many species of bacteria, and some of these are very poisonous. These organisms grow and multiply outside the body, and are abundantly disseminated when the temperature of the air is over 60° F., and they grow best in milk. Unfortunately, says Mr. Symes, milk at this period of an infant's life is its chief or only food; also it is the very best cultivating medium in which these poisonous organisms can flourish. It is thus easy to understand how the hand-fed infant so frequently falls a victim to summer diarrhœa.

This subject of classifying diarrhœa, says the author, has for generations greatly perplexed medical observers. It would appear now that as we are getting a little more light thrown upon these disorders they will become more simplified. A strictly anatomical classification is impossible. Those who have had most experience have failed to arrive at one, *because* there is no relation in any case of diarrhœa between the severity of the symptoms and the appearances found after death. Many forms are described, but there is no morbid anatomy to correspond. The severest symptoms, and the most fatal cases, frequently exhibit the fewest *post-mortem* lesions, while a child who during life has had but little diarrhœa may have the most intense structural mischief in the intestines.

As the administration of some patent food is to be found in nearly every case, combined, perhaps, with milk in various stages of decomposition from an apparatus impregnated with toxic germs, we can easily understand that fermentative changes are present in most instances. Deposits in dirty bottles teem with organisms. Tubes have been a fertile source of diarrhœa, and are often covered with a layer of decomposing "must."

A child with dyspeptic diarrhœa is very apt to contract the more infective forms, for its intestine is like a culture tube that is left open to many kinds of bacterial invasion.

Throughout the books we have endless forms described, resulting in a *melée* of names which confuse us. Many merely signify the character of the stool that is voided by the child—a description of the motion and not of the malady—while others are anatomical and hence misleading.

Whatever form, however, it may take, this disorder in children should never be made light of. Every case should be strictly investigated after it has existed for any length of time. Any kind of diarrhœa must be guarded against in summer. We must never lose an opportunity of examining the stools. Again, in children, diarrhœa sometimes carries off many noxious materials, and we should reflect on this before prescribing.

Thorough asepsis and cleanliness, free drainage, freedom from irritation, and perfect rest are the three principles in the indications for our treatment of many diseases of the infantile intestine; for since our knowledge of these ailments has increased, our treatment has correspondingly varied, and is now quite different from that formerly in vogue.

A Modified Treatment for Recent Lacerations of the Cervix Uteri.—Dr. J. Stafford (*Cincinnati Lancet-Clinic*) believes it to be conceded by all conservative obstetricians that every patient, two or three weeks subsequent to normal parturition at term, should be subjected to a vaginal examination in order to ascertain if involution is progressing favorably and if there are cervical lacerations. This precaution is equally if not more important in cases of premature delivery before the cervix uteri has become softened and, by the gradual process of uterine hypertrophy, seems to the touch as one with the uterine body, as at this time lacerations are not infrequent, especially where there has been rapid labor.

The early treatment of most pathological conditions affords the best results, and in this respect lacerations of the cervix and subinvolution, with retrodisplacements of the uterus, are by no means exceptions, and far better results may usually be obtained by local applications—exceptionally by operative measures—than in later years by curettage, trachelorrhaphy, Alexander's operation, or other modes of repair, when chronic inflammatory changes have taken place. The general practitioner usually makes a contract to attend an obstetric case for a certain compensation; is called at the time of labor, de-livers the patient, makes a few after-visits, and considers that he has done his duty in the case. In some instances no further care is actually needed, but in others patients seek relief for uterine disease months after delivery, the true cause of which can be traced to neglect on the part of the attendant at a previous labor. The writer is of the opinion that the physician attending a parturition is, in most instances, directly responsible for subsequent developments, and had he examined and properly treated the conditions before discharging the patient, she would have escaped much needless suffering and later gynæcological treatment for conditions consequent on the labor. The plan suggested has been systematically observed by the writer, who has had a varied experience in obstetric work for many years, and when the routine treatment shortly to be described has been administered, he has yet to recall a case of uterine disease that could be traced to a previous parturition as an ætiological factor. Immediate repair of perineal lacerations should, in nearly every instance, be performed, but the less manipulating within the vagina after birth, provided the conditions seem to be normal, the better the chances for avoiding sepsis and for a temperature not exceeding 100° F. by mouth. Should a digital examination be made immediately after delivery, the uterus is so soft that if a deep tear was diagnosticated, subsequent involution might prove that it was of but little moment, and one that would heal by local treatment if not by operating two or three weeks after delivery, before chronic inflammatory changes had taken place; the chances of a perfect result are then equally good, and the patient is usually in better strength to withstand it.

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* Emmett Holt. *Cf.* Ashby and Wright, *Diseases of Children,* third edition, 1896, p. 87.

The early treatment of this class of cases should be threefold—viz., directed to improving the uterine circulation, to the laceration of the cervix, and to the general condition. To meet the first indication, if there is a retrodisplacement of the uterus, some practitioners prefer pessaries and copious douches of water at a temperature of 110° to 115° F., to be used once or twice daily; and if there is but a slight laceration, with no displacement, doing nothing further than advise the continued use of hot douches; others apply soft tampons saturated with boroglyceride and glycerin, two or three times a week, thereby improving the uterine circulation by the osmotic effect of the glycerin, which, like the hot douches, aids in improving the circulation by relieving the congestion, and they believe that by this plan in time the uterine muscle will have regained its tone, normal position be regained, and slight lacerations heal.

Another mode of treatment, and one which the writer prefers to all others, in either cases of retrodisplacement or normal position, is "the pessary-tampon treatment." This tampon, cylindrical in shape, can be adapted in size to the vagina, and be the most comfortable and perfect-fitting pessary; moreover, it may be saturated with certain solutions which, in addition to supporting a displaced uterus, act in relieving congestion and stimulating lacerations to heal. Formerly the writer used as a medicament for the tampons a solution of boroglyceride and glycerin in proportion of one part of boroglyceride to eight parts of Price's glycerin, but of late he has come to consider the use of bovinine in these cases, and believes that by so doing he has made an advance over former applications. The upper end of the tampon, for about two inches, is saturated with a solution of equal parts of bovinine and the boroglyceride-and-glycerin mixture, while the lower half is saturated with the last-mentioned mixture only. Formerly the writer inserted a thin strip of iodoform gauze, ten per cent., into the uterus to favor drainage, but of late he has saturated all but the portion introduced into the uterine body with bovinine and made an application of bovinine to the lacerations. The advantages of this plan of treatment are that, in addition to the usual tampon applications, the lacerations are nourished and healing thereby hastened by the bovinine. The action of bovinine in these cases is not unlike that when it is employed in the treatment of superficial wounds. The poorer a patient's physique the less likely are cervical lacerations to heal, and the more likely is it that trachelorrhaphy will be required later. It is in just this class of cases that bovinine proves the most beneficial, by feeding the weak granulations, thereby effecting a cure and obviating operative procedures. Practitioners who do not know that bovinine is a perfectly sterile preparation would probably hesitate, he says, to introduce it into the cervix uteri, but there is no doubt in the mind of the writer that if the technique is perfect in other respects there is absolutely no danger from sepsis in the use of this preparation. As involution progresses the bovinine-iodoform-gauze drain may be omitted, but local applications to the lacerations and the pessary-tampon treatment should be continued about twice or thrice a week until the parts are healed. The writer does not herald this plan of treatment as a cure-all for every case of lacerated cervix, even when early treatment is administered, after the occurrence of the laceration, but thinks that it will cure in a very large per cent. of slight lacerations, and will afford the best preparatory treatment for operative cases by regulating the uterine circulation, thus obviating chronic congestion and the formation of adventitious tissue in and about the laceration, together with glandular complications of the cervix, so frequently seen.

The National Confederation of State Medical Examining Boards.—The seventh annual meeting will be held in Philadelphia on Monday, May 31st, under the presidency of Dr. William Warren Potter, of Buffalo. The programme includes the following titles: An address of welcome, by Dr. A. H. Hulshizer, of Philadelphia; Response, by Dr. Charles A. L. Reed, of Cincinnati; Reciprocity in Medical Licensure; a Plea for Interstate Indorsement, by Dr. William Warren Potter; an address, by Professor J. W. Holland, of Philadelphia; Some Practical Experience with and Results of the Medical Law of Pennsylvania, by Dr. William S. Foster, of Pittsburgh; The Need of Exact Information as to the Equipment, Methods, and Requirements of our Medical Schools, by Dr. J. N. McCormack, of Bowling Green, Kentucky; Remarks on Medical-practice Laws in the New Northwest, by Dr. Charles K. Cole, of Helena, Montana; and The Alabama System, by Dr. W. H. Sanders, of Montgomery, Alabama.

The Operative Treatment of Retroversion of the Uterus.—At the recent meeting of the American Gynæcological Society Dr. A. Lapthorn Smith, of Montreal, read a paper based upon ninety-four ventrofixations and fifty-three Alexander's operations. He held that ventrofixation was the only operation that should be entertained in cases of retroversion with adhesions; but it should not be done when the uterus was movable and when there was no disease of the appendages requiring abdominal section, in which cases Alexander's operation had given excellent results. There should be no death-rate to either operation, neither should there ever be hernia, either ventral or inguinal, if the following directions were followed. The two operations were equally easy, although a few years ago the author had been opposed to Alexander's operation on account of its difficulty. Now he could invariably find the ligaments, and generally in from half a minute to a minute and a half. He warned his hearers not to do Alexander's operation if there were any adhesions, even if they were loose enough to permit the uterus to be lifted up because they would be put upon the stretch and would drag so much upon the ligaments as to finally pull them out of their anchorage. In laying down the technics of Alexander's operation he placed great stress upon the importance of putting aside all cutting instruments as soon as the skin and the superficial and deep fascia had been cut through. Instead of laying open the inguinal canal, as advocated by some writers, he advised his hearers not to cut a single fibre of the intercolumnar fascia, which was the principal support of the pillars. Moreover, he said, the slightest nick of the fascia of the internal oblique would lead to a false passage and failure to find the ligament. If no cutting instruments were used, but only a Péan's forceps to draw out the ligament, there would be no difficulty in finding it, because there was nothing else in the canal but the ligament. In fact, with the eyes bandaged it could be found and drawn out, simply by introducing the forceps closed and then opening it, when the round ligament would fall into it and could be drawn out. He advocated the use of fine silkworm gut, which could be thoroughly sterilized and left in permanently. Occasionally he had been obliged to remove a buried stitch. In case any fibres of the intercolumnar or internal oblique should be accidentally cut, great care should be exercised in sewing them up, to avoid hernia. He had seen only one relapse after ventrofixation and one after Alexander's operation, which were both subsequently repaired. In several of the cases of ventro-fixation the patients had since become pregnant and had had normal confinements. Also in several cases of Alexander's operation they had had children. Many of the patients had been bedridden invalids for years before, but were now enjoying excellent health. Both operations, each in its proper sphere, had given the greatest possible satisfaction.

The Pathological Relation between the Nose and the Eyes.—There is a long and comprehensive article on this subject by M. Castex in the *Province médicale* for May 1st, which may be briefly summarized as follows: The remote results of general affections on the visual apparatus are well known, and it has been thought that this could be explained by the fact that the various tissues of the organism were represented in the ball of the eye or in its annexa. Ophthalmologists have chiefly noted the diseased relations of the eyes with the nasal fossæ or their sinuses which so completely surround the visual apparatus.

In the last century Richter contended that certain affections of the lacrymal sac could be explained by nasal diseases, and Hunter, in 1771, observed symptoms of irritation in the eye in affections of the maxillary sinus. In 1882 Ziem obtained a recovery in a case of irido-cyclitis, which occurred during an attack of smallpox, by treating the nasal mucous membrane. E. Berger, in 1892, adopted as an interpretation of this subject the nervous theory of the reflexes.

Regarding the pathogenic theories, three may be mentioned, as follows: The lacrymal, the vascular, and the nervous, each of which is not to be disregarded, for the reason that many a case of rhino-ophthalmic association is of difficult interpretation; but the lacrymal theory is the most generally accepted one at the present time for bacteriological reasons.

The author concludes that in ocular troubles the nose must be examined frequently and cocaine employed in order to see if it does not diminish the reflexes. When it is necessary, the eyes and the nose should be treated at the same time, principally by disinfection.

Holocaine.—Hering and Schlösser (*Klinische Monatshefte für Augenheilkunde*, April, 1897; *British Medical Journal*, May 8, 1897) report on this new local anæsthetic, which is the chloride of p-diethoxythenyldiphenylamidine; the latter is allied to phenacetine. The salt is crystalline, and of neutral reaction, soluble with difficulty in cold water, easily in hot water, but recrystallizing from solutions stronger than two per cent. A one-per-cent. solution dropped into a rabbit's eye causes no irritation; full anæsthesia is obtained in from fifteen to twenty seconds, and lasts from twelve to fifteen minutes. In dogs, full anæsthesia is obtained in forty seconds, and lasts twenty minutes or more. The anæsthesia is due to paralysis of the sensory nerve endings, and not to ischæmia. Holocaine has no effect on the pupil, on accommodation, or on the blood-vessels. It is detrimental to the lower forms of life (protozoa), inhibiting their movements, and, in fact, showing itself to be a protoplasmic poison. It has the same effect on bacteria. If the hot solution is put into a glass vessel, after some hours a deposit forms, owing to alkali freed by the hot water from the glass. If the glass is first thoroughly washed out with distilled water, this can be avoided; or porcelain vessels can be used. As the solution is antiseptic, it need not be sterilized by boiling. When absorbed, it has poisonous effects analogous to those of strychnine. The toxic dose for a mouse is 0.015 of a grain subcutaneously; for a medium-sized rabbit, from 0.15 to 0.225 of a grain. For ophthalmic practice a one-per-cent. solution is recommended, one or two drops of which will produce analgesia in forty or fifty seconds; if one or two drops more are now instilled, in thirty seconds full corneal anæsthesia will be obtained. When first instilled it causes some burning sensations, which, however, pass off in from thirty to forty seconds; also slight conjunctival injection, passing off in from one to two minutes. Anæsthesia lasts at least ten minutes. In the rabbit a one-per-cent. solution colored with methylene blue has been injected into the anterior chamber without irritation or inflammatory or other effects; and the solution has also been employed in operations involving an opening into the eye; its anæsthetic effect on the iris would seem to be quite as complete as on the cornea, and no poisonous effects from absorption have been observed. It has not been employed subconjunctivally. Like cocaine, it causes some unevenness of the corneal epithelium in rabbits, but this has not occurred in man. Holocaine would appear to be less likely than cocaine to injure the epithelium, as it does not constrict blood-vessels, so that the corneal lymph circulation ought not to be impaired. Its speedy action is also in its favor.

The Brooklyn Medical Society.—At the twenty-sixth regular meeting, on Friday evening, the 21st inst., Dr. Heber N. Hoople was to read a paper on Some Cases of Reflex Neuroses, and Dr. F. G. Winter was to present the following specimens: Cystic ovaries, sarcomatous testicle, section of the ileum for gangrene following intussusception, and a foreign body from the male urethra.

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DR. AUSTIN FLINT'S ADDRESS BEFORE THE AMERICAN MEDICAL ASSOCIATION.

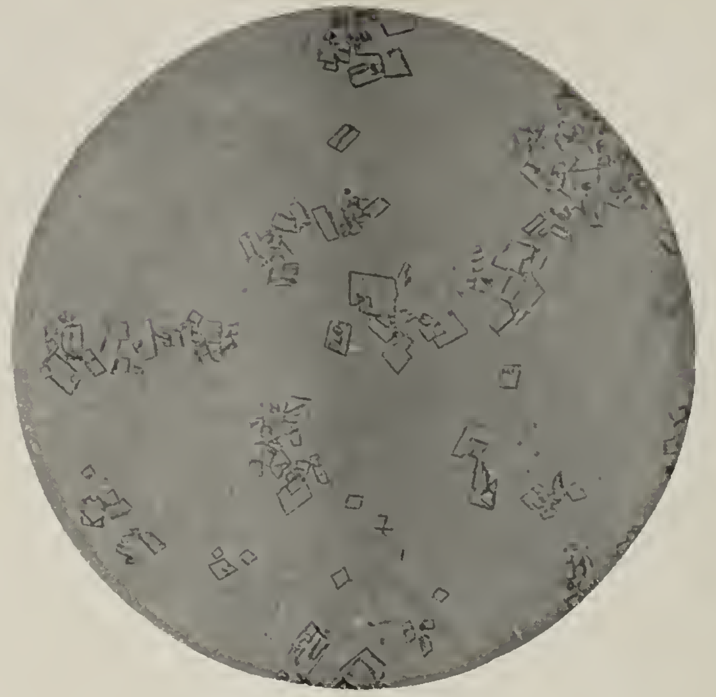

Fig. 1.—Cholesterin, 1897.

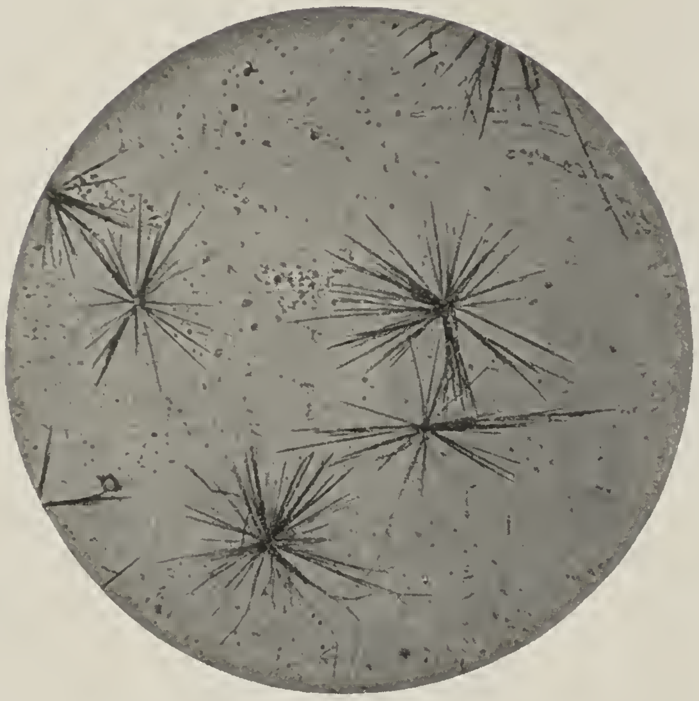

Fig. 2.—Stercorin, Flint, 1897.

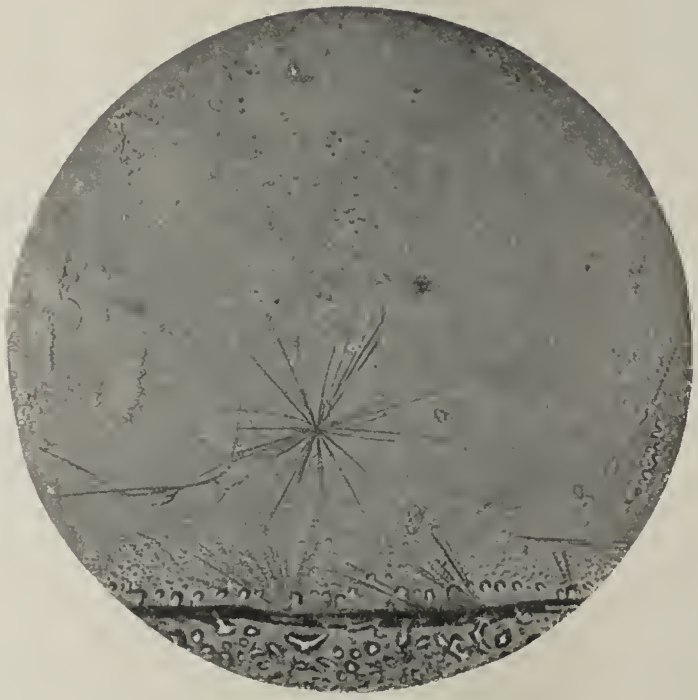

Fig. 3.—Stercorin, B. and H., 1897.

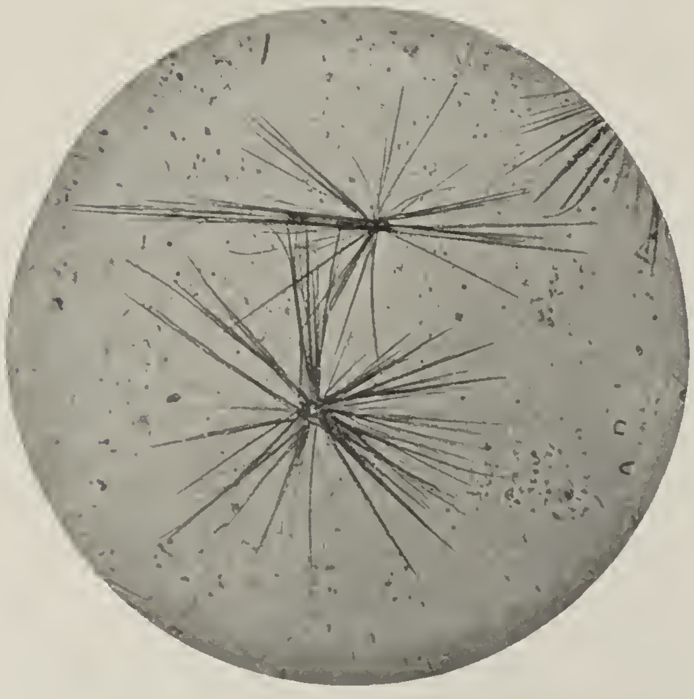

Fig. 4.—Stercorin, Flint, 1862, recrystallized in 1897.

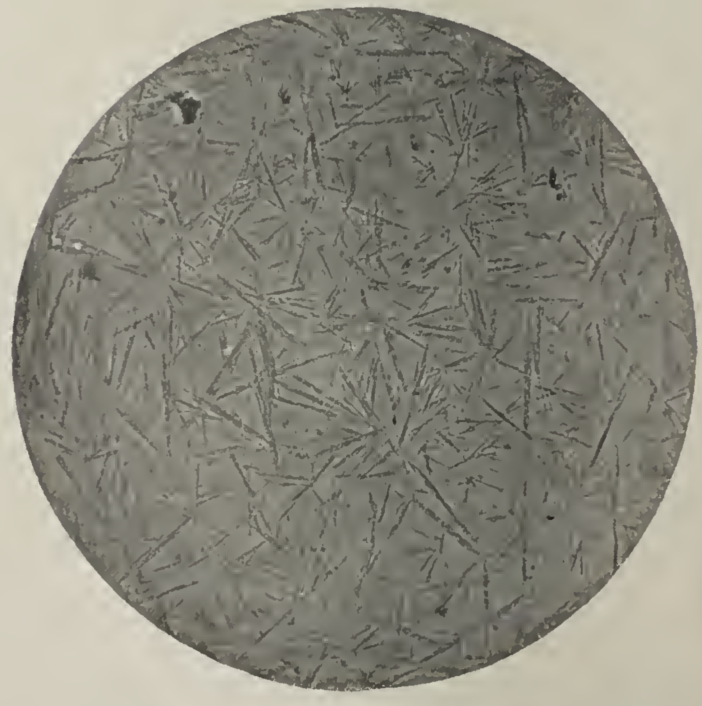

Fig. 5.—Stercorin, Flint, original slide of 1862.

Photographs by Professor E. K. Dunham, M. D. All magnified twenty diameters.

Lectures and Addresses.

STERCORIN AND CHOLESTERÆMIA.*

By AUSTIN FLINT, M. D., LL. D.,
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Looking far into the future, it seems possible that our successors may fix upon the month of May, 1946, as the true centennial of the American Medical Association, dating the origin of this body from May, 1846, when a convention of representatives of our profession, held in New York, proposed the formation of a national association, which was formally organized in 1847. If your orator of to-day finds it impossible to do justice to this occasion, how much more difficult will it be to present, in a single address, an adequate picture of a full century of medical progress! The year 1946 will be the centennial of the application of anæsthesia to surgery. It will be the third jubilee of the crowning glory of the eighteenth century, the completion of the discovery of vaccination, when the terrible scourge, small-pox, which had been more destructive to human life than war or famine, was virtually subdued. At the Jenner Centenary, held in Berlin in May, 1894, Virchow stated, as an ethnological fact, that "all peoples that had not been reached by vaccination, or that had not accepted it, had disappeared from the face of the earth, destroyed by small-pox." Will the orator of 1947 be able to point to a triumph of American medicine equal to the application of anæsthesia a hundred years before or to the beginning of an era in preventive medicine, like that inaugurated by the immortal Jenner? Looking into the future, it is possible that in fifty years small-pox will have disappeared from the face of the earth, like the peoples it has destroyed. But who can say, in the light of what has been accomplished within our own recollection, what may not be done within the next half-century? In the single line of preventive medicine, is it not possible that we may be able to secure immunity from tuberculosis, typhus and typhoid fevers, scarlatina, diphtheria, and other infectious maladies, and that these diseases may disappear? As it is now, even with a not inconsiderable popular prejudice against vaccination, many successive years have passed in the city of New York without a single case of small-pox; and medical knowledge is becoming daily more progressive and more generally accepted by the laity.

It is not too much to say that the convention of May, 1846, marked an era in the history of medical organization in the United States. It had become necessary that the medical profession should be unified and separated from those practising under sectarian designations, particularly as at least one sect was beginning to secure the confidence of men otherwise intelligent, and assumed to practise medicine on a scientific basis. Nearly coincident with the organization of this association was the discovery to which I have already alluded, which marked a grand epoch in the history of American medicine. On October 17, 1846, practically the first surgical operation was performed under the influence of an anæsthetic administered by inhalation. Its semicentennial has recently been most impressively celebrated at the Massachusetts General Hospital, in Boston. There are few who remember the horrors of severe surgical operations and the agonies of difficult childbirth before anæsthesia, as there are few remaining who participated in the convention which organized what is now the American Medical Association; but all can realize what surgery would be without artificial insensibility to pain, and what the medical profession would be without a national association.

The status of medicine forty years ago is quite within my recollection. Medicine is not, never was, and never will be an exact science; but it always has been progressive, and never more so than at the present time. Fifty years ago, perhaps medicine merited the reproach of being the least exact of all sciences; but its progress within the last fifteen years has been so prodigious that it is now in advance of them all. The Abbé illuminating apparatus made the study of bacteria possible; and this, with the wonderful apochromatic lenses, as it now appears to us, have rendered nearly perfect our technical means of histological and bacteriological research. We no longer differentiate and separate structures by the coarse methods of actual dissection alone, but with the delicate and precise instruments used in cutting thin sections and by staining, we have come to an exact knowledge of physiological and pathological histology, which, fifty years ago, seemed unattainable. Without staining fluids, the physiological and pathological histology of the present day would be impossible. Fifty years ago, skill in the diagnosis of certain diseases was acquired only by long practice and large experience. With our present methods, properly employed, it is impossible to make an error in the diagnosis of many of the diseases which formerly presented difficulties, such as typhoid fever, tuberculosis, diphtheria, cholera and most of the neoplasms. To say that pathology has been revolutionized within the last ten or fifteen years is not enough—a new pathology has been created, and with it have come an intelligent hygiene, prevention and therapeutics, based upon exact scientific knowledge.

Eleven years ago the great physician whose name I bear, and who still lives in the memory of this association, wrote an address which was to have been delivered before the British Medical Association, entitled Medicine of the Future. This classic legacy to the profession he so loved and adorned embodied recollections of a half-century of medical observation, with a prophetic view of the possibilities of medicine within the succeeding half-century.

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* Address in Medicine delivered at the semicentennial anniversary of the American Medical Association, in Philadelphia, June 2, 1897.

It was difficult for this wise physician to restrain his predictions within the bounds of reasonable enthusiasm. The epoch-making discovery of the *Bacillus tuberculosis*, announced by Koch in 1882 and graphically described and illustrated by Dr. Belfield before this association, at the meeting of 1883, made a most profound impression upon his mind and imagination, which found expression in an elaborate paper on the subject read in January, 1884. His predictions of possibilities in medicine before 1936 are now more than verified. It was predicted that "before the lapse of another half-century there will be another era in organic chemistry, and that light will penetrate dark recesses which histology can not reach." If "light" be taken in its literal sense, is not this more than realized by Röntgen's marvelous discovery, in which a hitherto unknown light is made to penetrate opaque matter and disclose the invisible? In 1886, he wrote: "Moreover, there are present intimations of important discoveries respecting inoculation with attenuated viruses and contagia in order to forestall the development of infectious diseases. Here open up to the imagination the future triumphs of preventive medicine in respect to all classes of disease." Now, little more than ten years later, serum therapy has taken a permanent place in practice, and we stand on the threshold of a full knowledge of immunity, natural and acquired.

As no human imagination fifty years ago could have pictured the condition of the medicine of to-day, so it to-day seems impossible to imagine the progress of another half-century. Never, since medicine became a science, has medical history been made so fast as now. Between the time of writing and of delivering this address, scientific labor may give birth to a discovery destined to revolutionize some department of medicine, as Pasteur, Koch and their followers have revolutionized therapeutics, and as Lister has created a new surgery.

The reasonable limits of an anniversary address do not permit even an enumeration of the greatest of the advances in the science of medicine since the organization of this association, much less their discussion. Your orator on surgery will find it impossible adequately to describe the progress of the last half-century in a single address; your orator on state medicine can hardly compass the wonderful advances made even in the single line of prevention of disease; and I certainly can not hope to be more successful.

It is a matter of congratulation that the name of this body was early changed from National to "American Medical Association." We have good reason to be proud of American medicine, and our great representative association may properly claim a distinctive title. When one is able to call up at random the discoveries in gastric digestion, anæsthesia in surgery and obstetrics, the successful deligation of the arteria innominata, the operation for vesico-vaginal fistula, ovariotomy, and intestinal anastomosis, to say nothing of minor advances in medicine and surgery, can we not claim a distinctive place for American medicine? It is in the United States that advances in the science of medicine find the most ready acceptance and appreciation. The American physician is the most intelligent and judicious therapeutist; and in the United States are the best and safest surgery and gynæcology.

I hope to see, beginning with the second half-century of the American Medical Association, a more complete unity of the profession, through its authority and influence. In the matter of general professional welfare, there seems to me nothing more important than uniformity in medical legislation, and, so far as possible, in educational requirements preliminary to the study of medicine and for license to practise after graduation. Admitting the proposition that the profession is crowded, it is evident that this condition is most serious in the large cities; but overcrowding can not be prevented by legislative enactment, except in so far as unqualified men are excluded. Uniformity of legal qualifications to practise medicine in the different States can best be secured by making every State society actually, as well as nominally, a branch of the American Medical Association, with permanent committees from each State organization together to constitute a central legislative body. The object of this central body should be to secure uniform medical laws in all the States, making any State license valid for all, and a matriculation certificate for one State good for matriculation in all schools represented in the Association of American Medical Colleges. A certain kind of medical instruction must be concentrated in large cities, where clinical material is abundant; and absolute uniformity of curriculum can not exist in all colleges; but certainly the legal requirements for practice, as determined by examination by State boards, can be made practically identical for all the States. While this would not prevent ambitious young men from trying their fortunes in large cities, it would distribute well-qualified physicians more equally in the country at large and tend to raise the standard of qualifications and usefulness of the average country doctor.

It is the prerogative of the presiding officer of this association to make recommendations, and this is not the province of one appointed simply to give an anniversary discourse. At the jubilee meeting to be held later in the session, it is hoped that the four surviving members of the convention of 1846 will be present. From at least one of these you may expect a more accurate and complete account of the past work of the association and a more intelligent view of its probable future than I am able to give. What I have had the honor to present I well know is entirely inadequate to the occasion, and it has been given merely as an introduction to addresses by others, which will be much more suitable and interesting. The remainder of the time that has been placed at my disposal I shall venture to occupy with a subject which I hope may not prove entirely unworthy of your attention.

Stercorin and Cholesterœmia.—While the presentation, on this occasion, of researches made and published thirty-five years ago—viewing the question from a physiological standpoint—calls for an explanation and perhaps an apology, none is required if their great importance in relation to the pathology of the liver is considered, especially as cholesteræmia is by no means accepted as a distinct pathological condition. Were it not that stercorin has just been rediscovered in Germany by two eminent physiological chemists, who make no mention of its full description in 1862 and have even called it by another name, I probably should not have repeated and extended my original observations. As it is, however, I feel that I may properly, as an American investigator, make my reclamation before the American Medical Association. Although my paper, published in the *American Journal of the Medical Sciences* in October, 1862, received an "honorable mention" and substantial recognition from the Institute of France, and my observations have been verified and extended by French and German investigators, many writers on physiology and pathology, even the most recent, fail to recognize such a substance as stercorin and, in treating of cholesterin, speak of its function as obscure or unknown.* In *An American Text-book of Physiology*, Philadelphia, 1896, cholesterin is described as a constant constituent of the bile, very widely distributed in the body, and eliminated by the liver cells from the blood. "That it is an excretion is indicated by the fact that it is eliminated unchanged in the fæces." Stercorin is not mentioned. As a matter of fact, cholesterin does not occur in the human fæces in health, and its presence in this situation is exceptional.

In Hoppe-Seyler's *Zeitschrift für physiologische Chemie*, Strassburg, 1896, is a paper by Bondzynski and Humnicki entitled The Destination of Cholesterin in the Animal Organism. The authors profess to have discovered a new constituent of the human fæces, which they call "koprosterin." This substance is identical with stercorin, fully described in 1862. The reading of this article led me to repeat the original researches of 1862, carrying them out by the methods then employed, at the same time repeating the observations of Bondzynski and Humnicki with the methods and appliances used in their work. It is mainly an account of these new observations that I now give. The chemical manipulations were done by Dr. H. A. Haubold, assistant to the chair of physiology in the Bellevue Hospital Medical College, and J. A. Mandel, assistant in the department of chemistry in the College of the City of New York and to the chair of chemistry in the Bellevue Hospital Medical College. To these two skillful assistants I am indebted for most painstaking and accurate work extending over a period of several months.

The original stercorin, of which specimens obtained in 1862 are in my possession, was extracted from the human fæces by the following process: The dried and pulverized fæces were extracted with ether. The ethereal extract was passed through animal charcoal and afterward evaporated. The residue was then extracted with boiling alcohol. The alcoholic extract was treated with potassium hydrate solution, at a temperature near the boiling point of water, in order to remove the fats by saponification, which were washed out with water until the filtrate was neutral and perfectly clear. The filter was dried, extracted with ether, and the ethereal extract evaporated to dryness and extracted with boiling alcohol. The stercorin was obtained from the alcoholic extract by repeated crystallization.

This process was exactly repeated in our recent observations, and, at the same time, stercorin was extracted by the process described by Bondzynski and Humnicki. Normal human fæces were obtained to the amount of about fifty pounds. After drying, the fæces were divided. Two analyses each were made by Haubold and Mandel, each one extracting stercorin in one portion by the original method, and in the other by the new method. All the extracts obtained were identical in their composition, reactions and the form of crystals. It was fortunate that I had for comparison a fairly large specimen of stercorin extracted in 1862, and a microscopic slide bearing the date of June, 1862, in which the crystals were perfect. The product obtained by my process was a little more abundant and crystallized rather more readily than that obtained by the later method.

In the process employed by Bondzynski and Humnicki, the dried fæces were extracted with ether, using Soxhlet's extraction apparatus. The fats were saponified with sodium alcoholate. No animal charcoal was used. The substance was purified by repeated crystallizations. These variations from the original method are unimportant, except in so far as they expedite the process of extraction. The form of the crystals and the reactions were identical with those which I obtained for stercorin in 1862. Analyses of the products obtained by us, full details of which are given in a paper sent to Hoppe-Seyler's *Zeitschrift*, gave, for stercorin, the formula, $C_{27}H_{48}O$, the formula found for cholesterin being $C_{27}H_{46}O$. The change of cholesterin into stercorin is effected by the addition to the former of two atoms of hydrogen. A close comparison of the results of our ultimate analyses with those obtained by Bondzynski and Humnicki shows conclusively that "koprosterin" and stercorin are identical, and that stercorin is not an impure cholesterin, as is held by some eminent investigators, such as Hoppe-Seyler, K. B. Hofmann, and others. Stercorin crystallizes in long, fine needles which radiate from a centre, forming tufts, and which can not be confounded with the characteristic crystals of cholesterin. In a chloroform solution, stercorin gives, with an equal volume of concentrated sulphuric acid, first a yellow color and then a gradual change to orange, red and finally dark red. Treated in the same way, cholesterin promptly gives a blood-red reaction without these intermediate tints.

The opinion expressed by Hoppe-Seyler, Hofmann, and indeed many others, that stercorin simply is impure cholesterin, can not have been based upon a practical knowledge of this substance. Stercorin has a well-defined formula—$C_{27}H_{48}O$—which has been calculated and verified by the formation of esters. Its crystals are quite different from crystals of cholesterin and are invariable in form, arrangement, and color. It was extracted by methods practically the same as those used in the extraction of cholesterin. In view of these facts, to assume that stercorin is an impure substance one must deny a positive scientific basis to organic chemistry.

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* Foster. *A Text-book of Physiology*, New York and London, 1895, p. 356.

In the recent, as well as in the original, observations it was clearly shown that cholesterin was changed into stercorin in passing down the intestinal canal. I found that this change involved processes incidental to intestinal digestion. Cholesterin and no stercorin was found in the fæces of fasting animals and in the meconium. Bondzynski and Humnicki found an increased proportion of "koprosterin" in human fæces after the ingestion of a certain quantity of cholesterin. They also showed that cholesterin united readily with bromine, while "koprosterin" formed no such combination; and, indeed, by the use of bromine, these two substances may be separated when they exist together. They confirmed the empirical formula for their product by the formation of a number of esters.

In 1862, I wrote: "What the discovery of the function of urea has done for diseases which now come under the head of uræmia, the discovery of the function of cholesterin may do for the obscure diseases which may hereafter be classed under the head of cholesteræmia."

It is now generally admitted that the bile, in addition to its function connected with digestion, contains one or more excrementitious matters. Taking into consideration the various ingredients of the bile, there seems to be but one which can logically be compared to urea. Cholesterin is found in many of the tissues and organs of the body and exists in the blood. Likening it to urea, it becomes a question whether it is formed in the liver and discharged in the bile or is merely separated from the blood by the liver and excreted. As it is constantly found in notable quantity in the nervous tissue, in the proportion of eight to twelve parts in a thousand, it occurred to me to examine the blood of the internal jugular and compare the proportion of cholesterin with that found in arterial blood. In one experiment on a dog, the blood being taken without using an anæsthetic, I found an increase in the jugular over the carotid of nearly sixty per cent. In an etherized animal the increase was only about three and a half per cent. In another dog, not etherized, the increase was about twenty-three per cent. There was also an increase of from four to six per cent. in the blood of the femoral vein over arterial blood. In three cases of hemiplegia, the blood from the arm of the sound side contained about the normal proportion of cholesterin, while blood from the affected side contained no cholesterin.

In an experiment on a dog it was found that the arterial blood lost about twenty-three per cent. and the portal blood about four and a half per cent. in passing through the liver, comparing these two kinds of blood with blood taken from the hepatic vein.

These experiments led to an examination of the fæces to determine the quantity of cholesterin discharged; but in a number of careful examinations of many different specimens of fæces I was unable to find cholesterin. I found, however, what appeared to be a non-saponifiable fatty substance in considerable quantity. Examining this substance daily with the microscope, after five or six days I saw crystals beginning to form, which finally presented the appearances I have already described as characteristic of stercorin. I found the daily discharge of stercorin to be 0.7 gramme, about equal to the estimated quantity of cholesterin discharged into the intestine in the bile in the twenty-four hours. In but one examination of fæces of the dog did I find cholesterin, and this was in a fasting animal, a small quantity of cholesterin being found with stercorin. In a specimen of meconium, I found a hundred and sixty parts in a thousand of cholesterin and no stercorin. In clay-colored fæces from a patient with jaundice from obstruction, neither cholesterin nor stercorin was found. In the fæces of the same patient, which were normal in color and obtained fifteen days after the first examination, stercorin was found and no cholesterin. These experimental facts seemed to show that the stercorin of the fæces was derived from the cholesterin of the bile, and that the change of cholesterin into stercorin was incidental to the processes of intestinal digestion. In no case was I able to detect in the fæces any trace of the biliary salts.

Passing from these observations to the pathological relations of cholesterin, after examining three specimens of normal blood and finding the proportion of cholesterin from 0.445 to 0.751 of a part in a thousand, examinations were made of the blood of patients with simple jaundice and those with what is called icterus gravis, the cases terminating fatally with grave nervous symptoms. In a case of simple jaundice, terminating in recovery at the end of about four weeks, the blood contained 0.508 of a part in a thousand, well within the limits in normal blood. In a case of jaundice with cirrhosis, terminating fatally with serious nervous disturbance, the blood taken six days before death contained 1.850 part in a thousand of cholesterin, an immense increase over the normal proportion. In this case, on post-mortem examination, the liver was found contracted, and the gall bladder was shrunken, containing only about seven cubic centimetres of bile.

The question of cholesteræmia has been much discussed since 1862, for the most part with scant approval or without acceptance. However, Picot,* in 1872, reported a fatal case of "grave jaundice" in which he determined a great increase in the proportion of cholesterin in the blood, 1.804 part in a thousand. Many attempts have been made, also, to produce toxic effects by injecting cholesterin into the blood, but most of them have been unsuccessful on account of mechanical obstruction of the blood-vessels. In 1873, however, Koloman Müller * succeeded by injecting cholesterin rubbed with glycerin and mixed with soap and water. In five experiments on dogs, injecting in each 0.045 gramme of cholesterin, he produced a complete representation of the phenomena of "grave jaundice."

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* *Journal de l'anatomie*, Paris, 1872, tome viii, p. 246 *et seq.*

In repeating the original researches of 1862, the observations, as regards analysis of fæces, etc., were somewhat extended. With modern apparatus, the manipulations may be freed from many disagreeable features which heretofore, probably, have interfered with this line of investigation. In extracting stercorin, various volatile fatty acids and other substances were removed, the constitution and relations of which are unknown. We studied, in this connection, some of the products of bacterial action, obtaining, by the action of fæcal bacteria on proteids, skatol and indol, both substances containing nitrogen. It is well known that phenol and cresol also exist in the fæces. These nitrogenized matters are putrefactive products, nothing is known of their physiological or pathological relations, and up to this time stercorin is the only excrementitious matter yet found in the fæces the origin and relations of which are at all understood. Our knowledge, indeed, of the physiological chemistry of the fæces is only just begun; and we may look to future investigations for much that will be most important as well as interesting. The same may be said, in a measure, of the bile and of the true pathology of certain functional and structural diseases of the liver. How long shall we continue to speak of biliousness, congestion or torpor of the liver, the classic "liver complaint," *et id genus omne*, using terms which have no scientific meaning? Undoubtedly there are general disturbances, dependent upon some disorder in the functions of the liver, which occur without jaundice, and this fact has long been recognized. In a case of cirrhosis with considerable constitutional disturbance but no jaundice, the blood was found to contain an excess of cholesterin, 0.922 of a part in a thousand. In what is termed acholia, there may be grave nervous symptoms without jaundice, and the pathology of such cases is unknown. The biliary salts are not found in the blood, and the symptoms can not be accounted for by disturbances in digestion. It is possible that light will be shed upon their pathology if it is admitted that there is a condition called cholesteræmia. As yet this is but speculation; but if the theory of cholesteræmia is accepted, a wide field of inquiry is opened in this direction, and ere long we may speak of "biliousness" and "liver complaint" with some definite ideas of their pathology.

It must be remembered that the liver is by far the largest gland in the body; that it secretes a fluid which is known to have a double function, one connected with digestion and the other with the elimination of cholesterin; that the blood from the digestive tract all passes through this organ, where it undergoes certain changes; that it probably stores up the products of amylolytic digestion in the form of glycogen; that it arrests certain poisons, and that it is the chief organ concerned in the production of urea, which is discharged by the kidneys. It may have other uses in what is now called internal secretion, in addition to that of destruction of blood-corpuscles and the change of hæmoglobin into bilirubin. With all these known varied uses of the liver, however, the pathology of hepatic diseases is most obscure. We do not know, even, the cause and mechanism of the formation of gallstones, which are often composed almost entirely of cholesterin.

The term acholia, as used in pathology, now means very little and conveys no distinct idea of the causes of the nervous symptoms which attend this condition. The term cholæmia is generally regarded as almost synonymous with jaundice. If cholesteræmia is recognized as a distinct pathological condition, with symptoms due either to the accumulation of cholesterin in the blood, acting as a toxic substance, or to imperfect separation of cholesterin from the nervous tissue, a positive advance will be made in our knowledge of the pathology of many obscure liver disorders.

The quantitative estimation of cholesterin in the blood is not difficult, and it does not require more than from four to six or eight grammes of blood. The only tedious manipulations are the drying, saponification and weighing; and these are readily done in a well-appointed laboratory. Some process may be devised which will expedite this extraction. If examinations of the blood were to be made in cases of obscure nervous disturbance, in epilepsy and other disorders of this nature, it is possible that cholesterin may be found to play an important part in their pathology. The fact that bromine readily combines with cholesterin, taken in connection with the wide use of the bromides in diseases of the nervous system, is very suggestive. May not the bromides promote the elimination of cholesterin, a substance which is so insoluble and which forms few combinations? These points seem well worthy of the consideration of pathologists and therapeutists. Certainly the physiological and pathological relations of cholesterin offer a wide and perhaps fruitful field for further observation.

With this paper I present photographs of cholesterin, stercorin extracted by the original method, and stercorin extracted by the method of Bondzynski and Humnicki, all in 1897, with a photograph of crystals obtained in 1897 from a specimen of stercorin extracted in 1862.

I have added, for comparison with the recent crystallization from the specimen of 1862, a photograph from a slide marked June, 1862. These crystals, which are from the same specimen of 1862, have been mounted for thirty-five years and are much more abundant and beautiful than those obtained by recrystallization in 1897.

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* Ueber Cholesterämie. *Archiv für experimentelle Pathologie und Pharmakologie*, Leipzig, 1873, Bd. i, S. 213 *et seq.*

Original Communications.

A STUDY OF TETANUS AND ITS TREATMENT.*

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Statistics.—Since the advent of antiseptic surgery tetanus has become less common than before, and is now usually considered a rare disease. That it is, however, of more frequent occurrence in New York city than is generally supposed is shown by the following table of deaths from tetanus, taken from the records of the Bureau of Vital Statistics for New York city.

Record of the Deaths from Tetanus in New York City from 1868-'96.

	TETANUS NEONATORUM.				IDIOPATHIC TETANUS.			
	Male.	Female.	Total.	Average.	Male.	Female.	Total.	Average.
1868-'77.......	278	193	471	47·1	52	24	76	7·6
1878-'87.......	305	202	507	50·7	16	9	25	2·5
1888-'96.......	219	144	363	40·3	31	21	52	5·7

The foregoing statistics of tetanus neonatorum may be considered as accurately representing the death-rate from that form of tetanus; while the statistics of idiopathic tetanus show a less number of deaths than actually occurred from traumatic tetanus. This is because in all cases of traumatism in which death occurred from tetanus the record of death was placed under the accident which caused the trauma. These figures, therefore, represent only the number of deaths from the so-called idiopathic and rheumatic tetanus—that is, those cases in which the lesion giving rise to the infection was either overlooked or had healed and could not be found. The death-rate in tetanus neonatorum is usually estimated as from ninety to ninety-five per cent. (1); therefore, the number of cases from this disease in children in the last twenty-nine years has amounted to about fourteen hundred and fifty, or fifty a year. Counting the traumatic cases, it seems a safe estimate to say that in this city there have averaged about sixty cases of tetanus a year for the past twenty-nine years.

The Tetanus Bacillus.—The tetanus bacillus is now accepted as being the cause of all the various so-called forms of tetanus, such as puerperal tetanus, tetanus neonatorum, idiopathic, rheumatic, and traumatic tetanus. To produce the disease there must always be some wound in which the bacillus finds lodgment. The bacillus itself is a slender, round-ended rod, usually occurring singly, but in cultures often growing in long threads. In its resistant stage it contains a round spore at one end. It will not grow at temperatures below 14° C., but grows at ordinary temperatures of 20 to 22° C., and best at body temperature of 37° C. It will not grow in the presence of oxygen, but is a strict anaerobe. Its growth in the animal organism is comparatively scanty, and is usually in association with other germs. It remains at the seat of infection, and does not spread through the body. The disease is a true toxæmia. The spores are very resistant to external influences. Henrijean (2), by means of a splinter of wood which had once caused tetanus, was able after eleven years to again cause the disease by inoculating an animal with the same splinter.

The Occurrence of Tetanus Bacilli in Nature.—Since Nicolaier, in 1884, discovered and identified the tetanus bacillus as the cause of tetanus, the bacilli have been found not only to be exceedingly common inhabitants of the soil, but when present even being as abundant at the depth of six or seven feet as in the superficial layers (3). They have also been found in many different substances and places—in hay dust (4), in horse and cow manure (5), in the mortar of old masonry (6), in the dust from horses' hair (7), in the dust in rooms of houses, barracks, and hospitals (8), in the air (9), in spider webs (10), in the water of the Dead Sea (11). Ledantec (12) has proved that the arrow poison of certain savages in the New Hebrides is made by smearing the arrowhead with dirt from crab holes in the swamps, and thus infecting the head with the spores of malignant œdema and tetanus.

It is well known that certain localities in the vicinity of New York are notorious for the number of cases of tetanus which develop from slight wounds—for example, some parts of Long Island and New Jersey. The writer has obtained tetanus bacilli from the dirt from various parts of Long Island and New Jersey as well as from the dirt of New York streets. Dr. Williams, of the New York Health Department, has twice obtained them from air in this city.

Factors favoring Tetanus Infection.—Considering the wide distribution of the germs, why does not tetanus occur more frequently? The work of Vaillard, Vincent (13), and Rouget (14), corroborated in the main by Klipstein (15), throws some light on the subject. These authors found that pure cultures of tetanus, after the germs had sporulated and the toxines had been destroyed by heat, could be injected into animals without producing tetanus. Even one or two millions of spores, if deprived of the toxines, proved harmless to guinea-pigs, and from fifteen to thirty cubic centimetres of broth cultures were harmless to rabbits. But if a culture of a non-pathogenic organism, such as the *Bacillus prodigiosus*, was injected simultaneously with the spores, or if there was an effusion of blood at the point of injection, or if there was a previous bruising of the tissues, the animals surely died of tetanus.

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* Read before the Society of Alumni of Bellevue Hospital, April, 1897.

Even irritating foreign bodies were introduced simultaneously with the spores deprived of their toxine and tetanus did not develop. But if the wounds containing the foreign bodies became infected with extraneous germs, tetanus developed and the animals died; or if the spores were protected by filter paper, or even by such a soft substance as agar jelly, the animals invariably died. Because, as was assumed, the phagocytes were prevented from attacking them, they thus had time to germinate, and the bacilli formed from them were able to produce their toxines. The pus from several cases of human tetanus was injected into animals, and both the tetanus bacillus and each separate species of germs were cultivated out in pure cultures. A pure culture of each germ was mixed with the non-toxic spores and injected into animals. The majority of the animals did not have tetanus; only certain species of germs favored the development of the spores and produced tetanus. In some cases the species was found to be a bacillus, in others a coccus; in one case none of the bacilli or cocci alone favored the development of the tetanus spores, but it was necessary to inject a mixture of one of the bacilli and one of the cocci with the spores before tetanus could be produced. From these experiments it seems that a mixed infection is necessary to the development of tetanus when the infection is produced by spores.

As a matter of fact, in human tetanus the infection may be considered as probably universally produced by the germs in their spore state. If in any given case, the tissue being healthy, the ordinary saprophytic germs are killed by proper disinfection, a mixed infection does not take place, and tetanus will not develop. Or, if the germs happening to be present, even if not killed by disinfection, do not favor the development of the spores, either by interfering with the integrity of the tissues or in some other way, tetanus will not develop. If, however, the tissues infected be badly bruised or lacerated, the spores may develop, as in the experiment on animals with previously bruised tissues. This conception of the importance of concurrent infection is still further supported by experimental data. It has long been noticed that direct infection from animal to animal with pus from wounds causing tetanus could not be carried beyond the third or fourth generation. The third or fourth animal would not become tetanic or would acquire only local and passing tetanus. Vaillard and Rouget (16) infected animals with earth known to contain tetanus spores, and counted the number of colonies developing in a given amount of the pus in each successive animal. In the animal infected with earth some thousands or hundreds of colonies were obtained, in the next animal scarcely a hundred colonies, and the pus from the third animal failed to produce tetanus. For example:

Guinea-pig 1, inoculated with earth, died of tetanus in five days; pus gave 32,570 colonies.

Guinea-pig 2, inoculated with pus from No. 1, died in thirty-six hours; pus gave 120 colonies.

Guinea-pig 3, inoculated with pus from No. 2, died in forty hours; pus gave 7 colonies.

Guinea-pig 4, inoculated with pus from No. 3, did not have tetanus.

The writer, as well as many other workers, has several times repeated these experiments with similar results. The micro-organisms which enhance the infective capacity of the tetanus bacilli, being usually saprophytic, can not be indefinitely transmitted from one animal to another, but soon die out, leaving the tetanus germs without favoring assistance, and these are thus unable to proliferate and produce their death-dealing toxines. Thus, in spite of the wide distribution of the tetanus germs, they seem to require some favoring condition of the wound or some favoring concurrent infection to enable them to grow in the animal organism.

Localization of Tetanus Bacilli in the Body.—Another factor in the case is that the tetanus bacillus does not belong to the septicæmic class of organisms which spread through the body and by their growth and enormous increase produce their effects, but, on the contrary, remains localized at the original point of infection. While there are a few cases on record in which the bacilli have been found in the tissues of the animal body other than at the point of infection, it does not militate against the fact that in the vast majority of cases the tetanus bacillus remains localized. This will be seen later to have an important bearing on the treatment of the disease. Nikolaier (17), in many experiments, found tetanus bacilli only twice in the spinal cord and once in the sciatic nerve. Rosenbach (18) found only occasional individual bacilli in two rabbits. Tizzoni and Cattani (19) also obtained positive results in their search for the bacilli. Monastyrski (20) in one out of four cases in human beings found the bacilli. Vaillard and Vincent (21), using a whole brain of a guinea-pig, once obtained a culture of the bacilli. Schnitzler (22) found them in the lymphatic glands in the groin of a patient who died from tetanus following an extensive gangrene from frostbite of the leg and foot. Dor (23) found the bacilli in an effusion of blood in the gray matter of the brain in a patient who died from tetanus from a compound fracture of the skull, and in the cerebro-spinal fluid from this patient. While this case is usually classed as one in which the tetanus bacilli were found away from the point of infection, it certainly would be more conclusive if the primary infection had not probably occurred within the skull. Büdinger's (24) experiments with the lymph nodes of tetanic animals, also cited as proving the presence of bacilli in the nodes distant from the seat of infection, do not sufficiently prove what the author alleges for them. The writer endeavored in two cases of human tetanus to repeat the findings of Schnitzler, but without success. The cultures remained sterile, and the animal experiments absolutely negative.

Nature of the Tetanus Poison.—What is the nature of this poison, and what is the mechanism of its action on the organism?

Richardson (25) in 1859 expressed his belief that the production of tetanus in traumatic cases was due to the fact that the wound in the process of healing secretes a special albuminous product which has the property of a ferment. This substance absorbed into the body excites new chemical changes, and as a product of these there is developed an alkaline or alkaloid substance having properties analogous to strychnine. Of course it was unknown to this observer that this "ferment" was of microbic origin, but after many years of research this theory has again been brought forward by several observers as the true solution of the character and action of the tetanus poison. These views are strenuously defended by Courmont and Doyon (26) and Uschinsky (27), this last observer having succeeded in obtaining albuminous substances from tetanus cultures grown in non-albuminous media, and considered the substances obtained to be the tetanus poison, more or less pure, and classifies it as a ferment, but the isolation of the pure poison was unsuccessful. As the result of their earlier experiments, Kund, Faber (28), Vaillard and Vincent (29), Tizzoni and Cattani (30), all believed that the tetanus poison was a ferment or enzyme. Fermi and Pernossi (31), in a long series of experiments, seem to have proved conclusively that the poison is not a ferment, and can not be classed with the enzymes. Brieger (32) has worked on another theory, and at first thought the poison a ptomaine, as he succeeded in separating four ptomaines from impure cultures of tetanus; these he named tetanin, tetano-toxine, spasmo-toxine, and the fourth was an unnamed base. But these substances did not on injection give the typical clinical picture of tetanus, though they caused the death of the animals by convulsions, etc. Brieger and Fränkel (33) shortly after this obtained from pure cultures of tetanus a substance which they called the toxalbumin of tetanus, which, on injection into animals, induced the symptoms of tetanic infection.

Recently Brieger and Cohn (34) and Boer (35) have succeeded in isolating the tetanus toxine in seemingly a nearly pure state, and show that the purer the poison the more it lacks the reactions characteristic of the albuminous bodies. Blumenthal's (36) researches seem to confirm the non-albuminous nature of the poison.

What the true composition and constitution of the tetanus poison are, thus remain as yet unknown, but the vigor of its action stands out with terrible distinctness. Brieger and Cohn found that their purified poison was surely fatal to a fifteen-gramme mouse in a dose of 0.00000005 gramme. Reckoning according to the body weight for a man of seventy kilogrammes or a hundred and seventy-five pounds, it would require but 0.00023 gramme, or 0.23 milligramme, to prove fatal. Comparing it with the snake poisons, Calmette (37) has found that the dried cobra venom requires 0.25 milligramme to kill a rabbit of four-kilogramme weight, and according to body weight it would require 4.375 milligrammes to kill a man of seventy kilogrammes, or a hundred and seventy-five pounds. As the fatal dose of atropine for an adult is a hundred and thirty milligrammes, of strychnine from thirty to a hundred milligrammes, and of anhydrous prussic acid fifty-four (38) milligrammes, the appalling strength of the tetanus poison can readily be appreciated. Without doubt, this poison is the most deadly yet discovered.

The Action of the Tetanus Poison in the Body.—Although the exact mechanism of the action of the tetanus poison on the animal organism is still a subject of controversy, especially concerning some matters of detail, the main points of its action may be considered as fairly proved. After the poison is once formed or injected in the body its absorption is rapid, as the following experiment shows. Roux and Vaillard (39) injected a fatal dose of toxine into the middle part of the tail in several rats; after varying lengths of time the tails were cut off at the base. All animals in which this operation was delayed for forty minutes or more died with the same rapidity as the controls.

The blood usually contains the poison, as has again and again been proved. Nissen (40) first proved that the blood of a tetanic patient was capable of inducing tetanus in animals when injected subcutaneously. Kitasato (41) also found the serous exudates of the pleural and pericardial cavities, as well as the blood, of tetanic animals would cause tetanus when transferred to other animals. Kallmeyer (42), Bruschettini (43), and others have obtained similar results. The blood, after absorption, soon carries the poison over the whole body, the rapidity of the development of the symptoms depending on the amount and virulence of the poison. In experimental tetanus, and in about one third of the cases in human beings, the first symptoms appear in the muscles adjacent to the point of inoculation or infection. In mild cases, or when a dose too small to be fatal has been received, the tetanic spasm may remain confined to these same muscles. But this peculiar localization of the earliest symptoms can not be explained by the diffusion of the poison through the body by means of the blood, because after absorption the poison must be evenly diffused wherever the blood circulates. Brunner (44) brought forward the theory that the nerve fibres themselves were the direct carriers of some of the poison from the point of entrance, and that the cells in the cord from which the nerves originated were thus the first to receive the poison, and, receiving it in more concentrated doses, first succumbed to its destructive action. Bruschettini's (45) experiments support this view. He found that the part of the spinal cord adjacent to the point of inoculation, either above or below, was always toxic, while other parts were non-toxic. Key and Retzius (46) injected solutions of Richardson's blue in the subdural space with low pressure, and found that the color made its way into the nerve trunk, often through the ganglia, and far out into the nerve branches. When injected into the ganglia or into the nerves the injection mass permeated the perineurium in all directions, and into the endoneurium, and isolated the individual fibres from each other. Injections into the cord showed a spreading of the fluid in all directions, up and down, and transversely. Hence, a fluid can easily go from the periphery to the centre. It is probable that such is the action of the tetanus poison. After the poison reached the central nervous system we had no clew, until lately, as to its further action. There was no appreciable characteristic pathological lesion which could be discovered macroscopically or microscopically. Beck (47), however, has described a peculiar degeneration in the motor cells of the cord in animals killed by tetanus. This degeneration does not seem to attack the entire cells, but only a peripheral part, and seems to be confined chiefly to the body of the cell, usually leaving the nucleus intact. Only very late do the nucleus and the nucleolus take part in the changes. The changes consist in a swelling of the cell and a homogeneous or finely granular degeneration with a swelling, and finally coarse lumping together of the chromatin. This is especially evident at the tiny eminence from which the axis cylinder arises and in the axis cylinder itself. Beck considers this as proving that the poison travels along the axis cylinder, and that, as the nucleus is the last portion affected, the change is not a necrosis, but only a modification of cell function.

Nissl (48) and Sailer (49) have also found undoubted changes in the ganglion cells in animals, and Nerlich (50) has found, in a case of human "head tetanus," a vacuole formation and progressing degeneration in the cells of the nuclei of the motor portion of the trigeminus, and in the nuclei of the facial and hypoglossal nerves. The experiments of Gumprecht and Brunner prove that the lesion is undoubtedly confined to the central nervous system, the muscles and motor nerves of the inoculated portion of the body having nothing to do with the origin of the tonic spasm nor of the convulsions. The sensory nerves may convey irritant stimuli to the cord, and in this way cause convulsions, but are not otherwise directly the cause of the convulsions. After section of the sensory nerves the convulsions occur in the completely anæsthetic limb.

Goldscheider (51) also believes that the action of the tetanus poison is on the central nerve cells, in consequence of which they assume an increased and ever-increasing excitability, the change taking place gradually, but going on continuously as long as there is absorption of poison from the wound. He maintains that the poison is conveyed to the nerve centres by the nerve trunks, and that it there acts on the ganglion cells gradually, covering a larger and larger area and increasing their excitability. But he believes, in addition, that there is a diffusion of the poison by means of the blood and lymph, to which the general spasms are to be attributed. It seems, therefore, without doubt that the tetanus poison causes an increased reflex excitability of the motor ganglion cells of the cord and medulla, and is thus analogous in action to strychnine. This theory of the action of the tetanus poison seems to the writer far more probable than the theory of Courmont and Doyon (52). According to these observers the so-called toxine elaborated by the tetanus bacillus is not the true poison, but is a ferment, which forms the poison in the body at the expense of the organism, and is found in the blood, sometimes in the urine, and in especial abundance in tetanized muscles. After this poison is formed it can be extracted from the muscles by boiling, and when injected into other animals causes immediate tetanic symptoms without any period of incubation. The contractures are the results of an irritation of the peripheral sensory nerves, and not due to any direct action on the medullary nerve centres. The characteristic incubation period is the time necessary for the fermentation to take place, and after the minimal fatal dose has been given any larger dose will not shorten the incubation period.

The results of Brieger, Cohn and Boer, and Fermi and Pernossi seem to prove that the poison is not albuminous and is not a ferment. Uschinski and Brunner (53), repeating the experiments of obtaining an immediately tetanizing substance from the muscles, have failed to confirm Courmont and Doyon's results. The incubation period can be as well explained by the dilution of the poison in the blood. From the experiments of Kitasato, and from his own experiments, the writer is convinced that the amount of toxine injected influences the duration of the incubation period. Gumprecht and Brunner have shown that the tetanic spasm and convulsions occur after section of the sensory nerve, and are not dependent on it for a causation of the spasm or convulsions. The injection of blood from tetanic animals causes tetanus in other animals, but always with the characteristic incubation period.

These are the reasons, briefly stated, why Courmont and Doyon's theory does not seem tenable.

All experiments fail to show why in the majority of cases in human beings, and in some of the higher animals, as the horse and ass, trismus and spasm of the pharynx are the first symptoms, regardless of the point in the body at which the infection has taken place. We must here suppose an elective action of the poison in some animals for the motor cells in the medulla, or, as the poison is slowly formed and acts slowly, an accumulation is necessary, and the muscles in which the inhibitory mechanism is least developed will be the first attacked (54).

When the poison is circulating in the body, do the excretory organs endeavor to discharge it? There is no doubt that this takes place in man and animals, as both the urine (55) and saliva (56) have been found to produce symptoms of tetanus when injected into animals.

Treatment of Tetanus.—The successful treatment of any infectious disease depends largely on our thorough knowledge of its mode of infection, and the mechanism of its action in the body after the infection has taken place. It is for this reason that in this paper the pathological physiology of tetanus has been dealt with in so much detail, for the best treatment of the disease is based upon the logical deductions drawn from our knowledge gained by scientific research.

From the foregoing it is readily seen that the indications for treatment in tetanus are both local and general.

Local Treatment.—First, what are the local indications and how are they best fulfilled? As has been shown, the infection as it occurs in practice can be considered in the majority of cases as an infection with tetanus spores. These spores require favoring circumstances to develop. If we remove these favoring elements we render the germs harmless. Thus, in regions where tetanus is prevalent, thorough cleansing of all wounds, however insignificant, becomes of more than the usual importance. Tetanus may and often does arise from wounds so insignificant that they are healed and forgotten before even the first symptoms of tetanus develop.

For this reason there still remain ideas of idiopathic and rheumatic tetanus. But these forms of tetanus are nothing more than cases of true traumatic tetanus, in which the point of infection can not be found or is overlooked from its supposed insignificance. A case reported by Sahli (57) well illustrates this point. In a boy suffering from tetanus the only lesions found were some insignificant scabs on the knee and one on the dorsum of the foot. This last was pulled off, and showed underneath healthy granulations nearly healed and no pus. This scab was put in culture and under the skin of a mouse which died of typical tetanus. The cultures showed no tetanus bacilli. The scab, therefore, was simply a source from which fresh toxine might be absorbed. The blood of the child at this time was non-toxic. Not only, therefore, should we carefully attend to slight fresh wounds, but the most strict and careful search should be made in cases in which tetanus has developed for all lesions of the skin, and all scabs should be pulled off and the surface beneath thoroughly treated by the cautery or by some disinfectant.

Disinfection.—Our ordinary disinfectants or antiseptics must here be considered from a different standpoint than is the case in ordinary surgery. Such disinfectants must be used as are not only antiseptic, but also antitoxic—that is, not only destructive to the micro-organisms themselves, but also destructive to their toxic products—for, as we have already seen, the toxines in the tetanic wound are almost as great a source of danger as the tetanus bacilli themselves.

Against our ordinary antiseptics tetanus spores are quite resistant, as five-per-cent. carbolic acid requires fifteen hours' contact to destroy them, and solutions of bichloride of mercury (1 to 1,000) require three hours (58). If, however, a half per cent. of hydrochloric acid is added to either of the above-mentioned solutions the action is greatly accelerated. Five-per-cent. carbolic and a half-per-cent. hydrochloric acid kills them in two hours, and 1 to 1,000 bichloride and a half-per-cent. hydrochloric acid kills them in thirty minutes. If the solution contains 1 to 1,000 bichloride with five-per-cent. carbolic and a half-per-cent. hydrochloric acid the spores are killed in ten minutes (59). Silver-nitrate solutions destroy the spores in one minute in one-per-cent. solution, and in five minutes in 1-to-1,000 solution (60). Bichloride alone, still further, does not fulfill the requirements in a tetanus wound, as it is absolutely inactive against the tetanus poison (61). The most active antitoxic agents we have are the iodine preparations—*e. g.*, iodine trichloride, Gram's solution, and Lugol's solution. These, besides being antiseptic, destroy the toxine already formed; iodine trichloride, in a half-per-cent. (61) solution, destroying it in less than an hour, and it is with Gram's or with Lugol's solution that the French experimenters weakened their toxine in their first immunity experiments. Kresol, in one-per-cent. (61) solution, is also markedly destructive to the toxine, destroying it within an hour; (61) carbolic acid, one-and-a-half-per-cent. solution, is equally antitoxic, while formalin, one-to-two-per-cent. solutions, exerts a decidedly destructive action in twenty-four hours' contact, as shown by the writer's experiments. Iodoform, chromic acid up to two per cent., and pyrogallol have no effect on the poison, while lysol (62) and potassium manganate, ten-per-cent. solution, require twenty-four to forty-eight hours to be effective. A tetanus wound should not, therefore, be casually cleaned with bichloride or carbolic alone, but should be treated with a stronger mixture, to kill whatever germs are present; but above all should the treatment further consist in a thorough application of the iodine solutions. In sloughing wounds these solutions should be deeply injected in the neighborhood around the wound. When the iodine solutions are not immediately available, and perhaps the hydrochloric acid, carbolic, or bichloride solutions are at hand, rather than rely too much on the hydrochloric acid, which, though antitoxic in a half-per-cent. solution, would be quickly neutralized in the alkaline tissues, it would be advisable to use caustic soda or potash (63) in solutions of 0.3 per cent. or 0.4 per cent., as they are as active as the 0.5 per cent. hydrochloric acid, and would not be subject to the same disadvantage, and would thus act more effectively.

Amputation.—The question of amputation, when the wounds are on the fingers or toes, or when the tetanus follows serious contusions of the limbs, is a question to be carefully weighed and acted upon promptly. It is better for a patient to live minus a finger, toe, or limb than to risk in an acute attack of tetanus the absorption of more poison from a wound whose lacerated and dirty condition prevents a thorough cleansing. In severe wounds of the head and body this question, of course, does not arise, and disinfectants must be relied on to prevent further absorption.

General Treatment.—In the general treatment of tetanus we have, as in all cases of poisoning, three indications to follow: 1. The speedy elimination of the poison. 2. The administration of physiological antidotes to counteract the action of the poison on the body cells. 3. Chemical antidotes which change the poison by destroying it or by rendering it inert, and thus prevent, retard, or arrest its action.

Means to further the Elimination of the Tetanus Poison.—To fulfill the first indication we have but to assist the action of the kidneys and endeavor, by their increased action, to eliminate the poison circulating in the blood. Probably the best means for this purpose is an excessive addition of fluids in the body. There is usually no trouble in persuading tetanic patients, if they can swallow, to drink an abundance of milk or water, as their thirst is usually excessive. Sahli (64) reports that in one of his cases he used with advantage subcutaneous and intravenous injections of salt solution. The intravenous injections seem preferable, as the subcutaneous irritation of the sensory nerves would distinctly tend to increase the convulsive seizures. Diuretin may be recommended to aid the diuresis, as it increases both watery and solid constituents of the urine. Whether the toxines are eliminated by the sweat is unknown; therefore it is hard to say whether an increase in the usual excessive sweating of tetanus would be an advantage. On the grounds that as the urine and sweat vary in inverse ratio to each other, and we are sure of elimination by the kidneys, it does not seem that it would be of advantage to increase the already excessive sweating. The toxine is also eliminated by the saliva, but whether this be discharged or swallowed can be disregarded so far as reabsorption is concerned, for in both herbivora and carnivora the living intestinal mucous membrane quickly destroys the tetanus toxines (65).

Physiological Antidotes.—Secondly, in choosing our physiological antidotes we must look for those that will counteract the damage already done by the tetanus poison. We are dealing with an enormously increased reflex excitability of the central nervous system, especially of the motor cells of the cord and medulla. Now, if we are able to hold in check the dreaded tetanic spasms and convulsive seizures of the glottis and respiratory muscles until the organism can recuperate, or if we can prevent the complete exhaustion by the incessant spasms of the cells governing the respiratory and circulatory functions, we may hope for success in our treatment. Fortunately, we possess several excellent remedies which can control this reflex excitability.

The best remedy of all is chloral, while the use of morphine, bromides, physostigmine, and antimony is often indispensable. All narcotics act more or less to diminish the reflex excitability, but chloral is the most reliable and effective. Bromides exert their action more on the cortical centres, and are thus less powerful in a disease like tetanus when the cerebrum is not involved. Physostigmine has been highly praised by many writers for its action in tetanus, seeming especially to control the convulsions. Its action is on the gray matter of the cord, acting first on the posterior horns and then on the anterior. It may in this way diminish the ability of the sensory nerve fibres to conduct external stimuli to the already overexcited motor centres, and thus diminish the reflex convulsions. Later, its paralyzing effect on the anterior horns would in itself prevent the spasms. Antimony was suggested to the writer as a remedy in tetanus by Dr. W. R. Bross, of New York city, who used it in Costa Rica in five cases of acute tetanus with short incubation periods, and succeeded in saving all five patients. He recommends that it be given in an eighth to a sixth of a grain doses with an equal amount of morphine every two hours. When given in this way it does not cause vomiting, and certainly seems to control the spasms, as was evident in a case of tetanus recently under the writer's care. According to Nothnagel and Rossbach (66), antimony causes complete disappearance of reflex activity, which on physiological grounds places it among the desirable remedies.

Morphine has an especially advantageous action of its own. Only in large doses is it usually considered to diminish the reflex excitability of warm-blooded animals; still it causes a cessation of the pain and produces sleep. As the tonic spasm in tetanus relaxes during sleep, morphine indirectly secures the end in view. Sleep in itself to the exhausted patient is a necessity, so that morphine fulfills two indispensable indications. The bromides are also useful in this connection, as they tend to diminish the overwrought condition of the brain and aid in producing sleep. The anæsthetics are not to be recommended for more than short periods, and their repetition is not without danger. Sahli (67) rightly emphasizes two factors in dosage: one is the individual factor in each case, the other the changing and alternating the remedies, for the purpose of preventing a tolerance to the drugs. As this author points out, if from the beginning one should reckon in a given case of tetanus the dose of the narcotics to be administered for several days, one is apt to give either too much or too little, since it is quite impossible to estimate the sensitiveness of the patient, as it is so greatly modified by the disease itself. Even in a single day the doses may have to be modified. It is wisest to begin with doses which in a healthy individual would produce a decided effect—*e. g.*, thirty grains of chloral hydrate, forty-five grains of bromide of sodium or potassium, and a sixth of a grain of morphine. The convulsions are the best criterion for judging whether narcotics should be increased or diminished. The toxic spasm is not so dangerous as the sudden convulsive seizures, and usually begins to relax simultaneously with the cessation in frequency of the convulsions, when improvement begins. As Sahli expresses it: "In the choice of the remedy the principle of alternation is the chief factor. If one always gives the same preparations, or always all the remedies in combination, one will generally have the experience that the effect is soon lost by tolerance. It is in one's power to prevent this by alternating the remedies. Of course, in giving the remedies of the chloral group a careful supervision of the pulse is necessary, while with bromides and morphine this effect is much less to be feared."

Chemical Antidotes.—Thirdly, have we any true chemical antidotes which circulating in the blood are able to destroy or render inert the tetanus poison? The substances which Kitasato, and later Fermi and Pernossi, have shown to be antitoxic are, as a rule, not available for therapeutic purposes. The most effective antitoxic substances, as we have seen, are carbolic acid, kresol, and the iodine solutions. While these substances are so effective outside the body, is it possible to obtain a sufficient concentration within the body to destroy the toxine? Our experience with internal antiseptics in general infectious does not give us much hope in this direction. Too great a concentration of the antidote is necessary for us to hope for any effect on the tetanus poison. Bacelli (68), it is true, recommends subcutaneous injections of one-per-cent. solutions of carbolic acid, and several cures are reported following this plan of treatment. Though this was recommended empirically at first, carbolic acid is antitoxic and it may perhaps have some action; but as a half-per-cent. carbolic acid is used to preserve the toxine in the laboratories, it is more than doubtful if sufficient concentration could be obtained in the blood to make it effective, and besides, its poisonous effect on the organism is certainly to be feared.

ANTITOXINE.—We have therefore to turn to antitoxic serum, which, as we know by absolute proof, in some way renders inert the toxine circulating in the blood.

Preparation of the Antitoxic Serum.—The tetanus antitoxine is prepared in the same manner as the diphtheria antitoxine, by inoculating the tetanus toxine in increasing doses into horses. The toxine is grown in bouillon under hydrogen, and after ten or fifteen days filtered through porcelain, and the germ-free filtrate is used for the inoculations. The horses receive half a cubic centimetre as the initial dose of toxine, and this dose is increased as rapidly as the horses can stand it, until they support seven to eight hundred cubic centimetres or more at a single dose. After some months of this treatment the blood of the horse contains the antitoxine in sufficient amount for therapeutic use. When the animals' temperatures are normal and they have recovered from the dose of toxine last given, they are bled into sterile flasks and the serum collected. The serum contains the antitoxine and is tested on white mice or guinea-pigs.

The Antitoxic Serum of the New York Health Department.—The New York health department has at present two horses well immunized against tetanus, and furnishes serum of the strength of one to four hundred million—that is, one cubic centimetre will protect four hundred million grammes of white mice against a three-to-four-day fatal dose of tetanus toxine. Reckoning in antitoxic units, twenty cubic centimetres of serum will contain eight thousand antitoxine units, an antitoxine unit in tetanus being the amount of serum necessary to protect one million grammes of test animal.

The serum is supplied in twenty-cubic-centimetre bottles, and should be injected in ten-to-twenty-cubic-centimetre doses. In severe cases the patient should receive fifty cubic centimetres in the first twenty-four or thirty-six hours, and these ten-to-twenty-cubic-centimetre doses repeated once or twice each day during the following four or five days or longer, according to the course of the disease. The circular accompanying the bottles explains more fully the proper method of procedure.

The Action of the Antitoxic Serum in the Body.—As has been shown by Roux (69) and Calmette (70), the antitoxic serum has no direct destructive action on the toxine itself, but through some unknown action on the body cells the serum prevents the toxine from exerting its destructive action. Behring's first idea that there was a direct destructive action between the antitoxine and toxine or some neutralizing effect, such as occurs between an acid and an alkali, has been shown to be incorrect. As Buchner (71) also shows, there is no destructive action of the antitoxic serum on the toxine either outside or within the body, the action seeming to be one which, by producing certain changes within the cells, renders the action of the toxine inert. Tizzoni (72) concludes that the blood serum of vaccinated animals does not act as a remedy which neutralizes in the organism a certain active principle of disease and directly counteracts certain functional changes [as our physiological antidotes do], but it acts, in all probability, in curing tetanus by immunizing the parts of the body not already tetanized, and so limits the tetanus to a local form.

Comparison of Statistics.—In estimating the value of any new remedy we must have certain undeniable facts on which to base our comparisons of old and new, such as a known death-rate, and we must criticise minutely our statistics rather than simply compare the death-rate. Unfortunately, the death-rate in tetanus has been so variously stated by different authors that it is difficult to say what is the true average mortality. In acute cases it is given as being from seventy-eight to 96.6 per cent.; in chronic cases, as being from 17.8 to fifty-five per cent.: the average for all cases varying from twenty-one to 87.5 per cent. The largest number of cases collected are 1,222 (73) war cases, with a mortality of 88.6 per cent., and 280 (74) cases occurring in time of peace, with seventy-six per cent. mortality, making 1,502 cases, with 87.7 per cent. mortality.

The fairest estimate seems to be eighty per cent. for acute cases, and about forty per cent. for the milder or chronic cases, and sixty per cent. mortality for all cases. In estimating the value of the antitoxine treatment we must consider in each case the duration of the incubation period of the disease (75), the rapidity of the onset, with the frequency and intensity of the convulsions, and finally the promptness with which any kind of rational or radical treatment can be or has been applied. The prognosis in cases not treated with antitoxine is relatively favorable if the incubation period is long, ten days or more, the onset slow, and the spasms are not severe; it is bad if the incubation period is less than ten days, the onset rapid, and the spasms severe (76). The following cases of tetanus comprise published and unpublished cases treated with antitoxine.

Résumé of Cases Treated with Antitoxine.—We have a total of a hundred and fourteen cases with a mortality of forty-six, or 40.35 per cent. All those with an incubation period of eight days or less and with a rapid onset of the symptoms, or those with a longer period of incubation, but with an intensely rapid onset, have been classed as acute cases. All those with incubation period of nine days or more, or those with a shorter incubation where the onset was slow, have been classed as chronic. Six cases from lack of sufficient data are not classed; five of these patients recovered, one died with a complication of pneumonia. There remain forty-seven acute cases, with twelve recoveries, thirty-five deaths, and a mortality of 74.46 per cent. Of the chronic type, sixty-one cases, fifty-one cures, and ten deaths—a mortality of 16.39 per cent. Following Kanthack's system of criticism, we must exclude all cases which have died with intercurrent diseases, and all cases of those who died twenty-four hours after treatment was begun, as these really prove nothing as far as a fair estimate of any treatment is concerned; but we must also exclude all mild cases of recovery which did not receive treatment till the tenth to fifteenth days of disease, as such cases usually get well under any treatment. We must therefore exclude sixteen deaths in the acute cases, leaving thirty-one cases, with twelve recoveries and nineteen deaths—*i. e.*, 61.29 per cent. mortality. We must also exclude in the chronic cases thirteen cures and eight deaths, leaving forty cases, with thirty-eight recoveries and two deaths, or five per cent. mortality. This is certainly an improvement on the usual death-rate, being a total mortality of only 29.57 per cent. Of course, a final judgment of any treatment must be based on a larger total than seventy-one cases. But such a number is sufficient to show that some new beneficial factor has been present in the new treatment which was absent in the old methods. Yandell, in 1870 (77), in speaking of the prognosis of tetanus, declared that "recoveries from traumatic tetanus have been usually in cases in which the disease occurred subsequent to nine days after the injury. When the symptoms last fourteen days recovery is the rule, apparently independent of treatment. The true test of a remedy is its influence on the history of the disease. Does it cure cases in which the disease has set in previous to nine days? Does it fail in cases whose duration exceeds fourteen days? No agent tried by these tests has yet established its claim as a true remedy for tetanus." Does antitoxine by these criteria establish a claim as a true remedy for tetanus? In acute cases, developing eight days or less after the injury, in thirty-one cases the recoveries have amounted to 38.71 per cent., deaths 61.29 per cent., as against treatment without it of twenty per cent. of recoveries and eighty per cent. of deaths. In one hundred and one cases in which the duration of the disease is given, all those which passed the fourteenth day recovered. Antitoxine, therefore, by Yandell's criteria, fairly establishes itself as a true remedy for tetanus.

There are some cases of tetanus of such short incubation and such intense rapidity of onset that in spite of all treatment they die within from twenty-four to thirty-six hours after the first symptoms appear. These cases at present seem hopeless.

Limitations of the Treatment with Antitoxic Serum.—From the nature of the antitoxic serum and its peculiar action in the body it is necessarily limited in its action. We have shown that it does not directly act on the tetanus poison and destroy it, and that it can not undo the injury already done; it can only prevent further damage. It is possible, as certain cases of Roux's (78) show, that the disease may go on to a fatal termination, even after the blood of the patient has become markedly antitoxic. This emphasizes very strongly the necessity of the early use of the antitoxine; besides, as Behring (79) has shown, the amount of serum necessary to protect an animal, when introduced simultaneously with the toxine, must be increased a thousand times if we wait till the first symptoms appear, and ten or a hundred thousand times if we delay a few hours longer. The serum will render inert the toxine circulating in the blood and any more toxine which may be generated in the wound; it is therefore necessary to inject the serum as soon as possible, and in sufficient abundance. Compared with the results of serum in diphtheria, the results in tetanus must always fall far short in their success. In diphtheria the position and character of the lesion give early warning before the body is hopelessly poisoned, but the tetanus poison has insidiously gained control and often irreparably damaged the organism before its symptoms show themselves. The rapidity of recovery in the cases treated with antitoxine does not seem to depend on the amount of antitoxine injected nor as much as one would expect on the day of injection. This seems in direct opposition to what has just been said above, but is the logical consequence of the mechanism of the action of both toxine and antitoxine. Recovery depends entirely upon the degree of damage which the toxine has done before the antitoxine has been injected. As the virulence and the amount of poison and the extent of damage already existing in any given case are always unknown, and must remain unknowable, it is but another warning, stronger than anything else can be, that we must use the antitoxine at the earliest possible moment.

The general treatment of a tetanus patient, such as nourishment and absolute quiet and rest, stuffing the ears with cotton to keep out sounds, etc., has not been touched upon, as it is self-evident.

Preventive Inoculations.—By means of the antitoxine treatment, combined with other rational methods, the prognosis, even in acute cases, has been improved; but it still remains exceedingly grave, so much so that the preventive inoculation of serum in all cases where dirt has been ground into serious contusions deserves a much more extensive consideration than has yet been given it. In France, Dr. Bazy (80), after having four fatal cases of tetanus in one year, has made it a practice to inject ten cubic centimetres of serum into all patients who have come under his care with wounds which caused him to fear a possibility of tetanus. He has not seen a single case of tetanus since, though his practice has been in a region where the soil is notoriously contaminated with tetanus bacilli. Nocard (81), in veterinary practice, first followed this plan of treatment, and reports that of three hundred and seventy-five animals treated with immunizing doses of serum not a single animal has acquired tetanus, while in the same locality he has seen fifty-five cases of tetanus in animals not so treated. These are certainly striking results, and it seems wise in a neighborhood like New York, where tetanus is not uncommon, to treat patients with immunizing doses of serum when the lacerated and dirty condition of their wounds may indicate the possibility of a tetanus infection. They will not have tetanus, and we may never know whether they otherwise might have had the disease, but we certainly shall prevent the patient from running the risk of an acute attack of tetanus, which is the main point.

An attempt has been made in this paper to explain the pathological physiology of tetanus, and to build on established scientific data the rational line of treatment which promises the greatest success. There is no line of treatment which will give as brilliant results as one would wish for, but, as Roux has said, one can not choose in practice either the case or the time of intervention. We must, therefore, use that which gives us most promise—local disinfection, physiological antidotes to hold the disturbed functions of the cord in check, and the antitoxic serum to annul all further action by the toxine. By these means the recovery of the patient seems best assured.

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A METHOD OF TREATING SUNSTROKE.

By GEORGE F. CHANDLER, M. D.

During the hot term of 1896 the results obtained at St. Vincent's Hospital, New York city, from the treatment of insolation were quite satisfactory. The method employed may be of interest to some.

Owing to the rush of work and lack of help, a full account of each case was impossible; but the following statistics will show roughly the percentage of loss:

Date.	No. admitted.	Recovered.	Died.
August 7	11	10	1
" 8	8	8	0
" 9	13	13	0
" 10	37	32	5
" 11	44	42	2
" 12	57	54	3
" 13	29	28	1
" 14	8	8	0
Total	197	185	12

The temperature in each of the above cases ranged from 105° F. to the limit of an ordinary clinical thermometer. Nearly every case was higher than 109° F., and in some the mercury reached 112° F. so quickly that if special thermometers had been used no doubt it would have reached a higher mark.

Three of the twelve deaths occurred upon admission. Later on six of those who had recovered from insolation died of meningitis, probably as a result of the sunstroke. Three of the six lived over twenty-one days. Some of the patients, when they had recovered sufficiently, were transferred to Bellevue Hospital. No account of these can be given, as to whether any one of them had a subsequent meningitis, or the like. The percentage of loss, therefore, was a little over nine per cent.

Dr. Joseph O'Dwyer, by whose courteous permission this article is written, was the visiting physician.

Treatment was as follows: The ambulances were well supplied with ice, which was kept about the patient's head from the moment he was picked up until he was entered at the hospital.

Upon admission the patient was immediately stripped. His temperature, *per rectum*, was taken as he was being placed upon a raised stretcher or table. Since nearly all patients have involuntary evacuations, the head of the stretcher was occasionally lifted in order to secure proper drainage.

The body of the patient was covered with a sheet, upon which were placed small pieces of ice. Large quantities were laid closely about the head.

Ice water from dippers, at a distance of from five to ten feet, was dashed with force upon the patient. This was continued about thirty or forty minutes.

The most efficacious stimulant, and one which served to arouse when everything else failed, was the pouring, from an elevation, of a fine stream of ice water upon the forehead. As this treatment was very radical, it was continued for only one or two minutes at a time. In severe cases it was repeated several times, unless consciousness obtained.

While this was going on, each patient, with very few exceptions, was given by hypodermic forty minims of the tincture of digitalis at one dose. This was found to be of great benefit. The cases in which it was not given were the plethoric ones, with great tension in the arteries. Upon such patients venesection was practised, and later tincture of digitalis was given in smaller doses.

Meanwhile the temperature was carefully watched, and when it reached 104° F. the patient was laid in a bed, covered with blankets, and hot bottles were placed about him. In cases where the temperature only reached 105° or 106° F. this course of treatment was employed upon its being reduced to 102° F.

The reason for this is that when the temperature is reduced to 99° or 100° F. by bath, as is usually practised, clinical history shows that it nearly always becomes subnormal—even falling at times as low as 91° F. —and leaves the patient in collapse.

This tremendous difference of temperature, brought about so quickly by the bath, had proved in former experience to prostrate to such a degree that comparatively few patients could rally.

When the temperature is reduced to 104° F. it will, in most cases, continue downward of its own accord.

The application of blankets and hot bottles makes the descent so gradual that it does not become subnormal, and in most cases perspiration will set in. This is the most encouraging sign of all.

At the first indication of consciousness whisky was offered. Most would take it, and, as a great number of these persons were hard drinkers, whisky served to modify or avert the convulsions which are so common.

Strychnine was never given. It proved upon trial to cause convulsions or make them more violent.

Convulsions were treated by chloroform. The instant a patient began to twitch, chloroform was administered, little by little, as long as necessary—sometimes even for three or four hours. The convulsions rarely became dangerous.

When the secondary rise of temperature occurred, a sheet, wrung from ice water, was spread over the patient, and kept wet until the temperature became normal.

In some of the cases, where the secondary rise was very rapid, the entire ice-and-water treatment was repeated several times, or until the temperature remained normal. An ice cap was kept upon the head from the time the temperature became normal until the patient was dismissed. This was of the utmost value.

In cases of prolonged unconsciousness patients were nourished and stimulated by means of the stomach tube.

Caffeine and whisky were chiefly given, but other cardiac stimulants were administered when necessary. In extreme cases hypodermics of whisky were used. Morphine was not used at any time.

As death seemed the result of respiratory paralysis, artificial respiration was kept up for long periods of time—often half an hour or more—with surprising results.

The after-treatment consisted of light diet, stimulants, fresh air, the ice cap, and sudorifics, such as ammonia—preferably the spirits of Mindererus—in large doses.

75 West Twelfth Street.

AN EXPERIMENT WITH
THE SERUM REACTION AS A TEST FOR TYPHOID INFECTION IN WATER, ETC.*

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To say that the injection of a suitable quantity of living or dead typhoid bacilli into a suitable animal will produce a typhoid reaction in the blood of the animal is to state a well-known fact. So far as I am aware, however, no one has attempted to utilize this as a means of demonstrating typhoid infection of drinking water, milk, etc.

Wishing to test this point practically, I introduced one cubic centimetre of a typhoid bouillon culture into a flask containing two litres of tap-water from which eleven thousand colonies to the cubic centimetre grew on gelatin at room temperature. After shaking the flask, one cubic centimetre of the water thus infected was introduced into a second flask containing two litres of the same water. From this second flask, which thus represented a dilution of one to four millions of the original bouillon culture, one cubic centimetre was placed in five cubic centimetres of ordinary peptone bouillon and grown at 37° C. for twenty-four hours. The bouillon was then sterilized for one hour at 65° C., and injected into the peritoneal cavity of a rabbit.

The animal's health remained good, except for a slight loss in weight. Its blood, examined after an interval of eight days, gave a perfectly typical reaction when tested with a typhoid culture. The blood had been tested before inoculation with negative results. The blood of a control animal inoculated with five cubic centimetres of a bouillon culture made from the same water without adding typhoid gave no reaction, nor did that of another control animal kept with the others and not inoculated.

It had occurred to me some months previously that by testing in this manner samples of suspected water and milk, typhoid infection might be demonstrated more readily than by making cultures. I tried it in the case of two samples of suspected milk in December, 1896, with negative results, but in both of these the circumstances of the case made typhoid infection seem improbable, and I thought it better to apply the test under more definite conditions.

It will be remembered that Vaughan * inoculated white rats with mixed cultures from water sediments for the purpose of demonstrating in a general way whether infective or toxic substances were present. Now that we have a definite means of recognizing the effects of the typhoid bacillus this method of investigation offers more prospect of being of permanent utility.

I am now, with the aid of Dr. D. D. McTaggart, making studies as to the conditions under which a positive result may be looked for. The above experiment is cited only as an illustration of the method, possibly an exceptional one. Whether it will prove of practical use in laboratory work I am not at present able to say.

Concentration of the suspected substance by collecting the bacteria in a porcelain filter naturally renders the test more delicate, as does also the employment of specialized media for the cultures. I have found that rabbits show the reaction at an earlier stage than guinea-pigs, in some cases in two or three days after inoculation. They also have the advantage of being less susceptible than guinea-pigs to septic influences. The preliminary sterilization of the culture is not essential. It lessens to some extent the chances of obtaining a reaction from typhoid infection, but, on the other hand, it permits a larger dose to be given. By averting the danger of concurrent septic infection by other bacteria it increases the animal's chance of surviving long enough to give the reaction time to develop. Small repeated doses we know to be safer than large initial ones. With proper care a typhoid reaction can be induced without the animal's health being seriously impaired.

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* Read before the Montreal Medico-chirurgical Society, May 4, 1897.

* *Transactions of the Society of American Physicians*, 1892.

Capacity to produce a blood condition which will react with a genuine typhoid culture is stronger proof of a suspected organism being the genuine typhoid bacillus than capacity of a doubtful culture to react with typhoid blood, as clumping has been shown to occur with other organisms. Hence the production of the blood reaction experimentally with an organism isolated from a suspected water should not be omitted when it is necessary to operate under very rigid conditions of experiment.

The only use to which typhoid serum reaction appears to have been applied so far by others in connection with suspected water is in the testing of organisms isolated by the usual means to see whether they react. I have already published elsewhere * short accounts of some experiments where impure twenty-four hours' bouillon cultures containing typhoid and colon bacilli were treated by adding sufficient typhoid serum to produce clumping, and then in one to two hours, when this was complete, were filtered through an inch of sand, as done in the Sedgwick-Rafter method for the quantitative microscopical analysis of water sediments. It was found that the filtrate yielded almost exclusively red colonies when grown on lactose litmus agar, whereas those obtained from the sediment were nearly all blue ones, showing that the separation of typhoid and coli by this means is rapid and complete. Care must be taken to decant or filter the culture before adding the coagulant (typhoid serum), as there is always some sediment with *Bacillus coli* at the end of the twenty-four hours' incubation. Introducing a thread or cotton filament, on which typhoid blood or serum has been dried, into the culture leads to localized clumping of the typhoid bacilli about and upon it. The paralytic effect of the typhoid serum, however, prevents this method of separation from being entirely satisfactory. I have found that for the mechanical separation to take place the typhoid bacillus must be present in considerable amount, and I have not yet worked out a satisfactory routine method of applying it to the examination of fæces or water.

In the phenolized and acid bouillons recommended for typhoid isolation the typhoid clumping, as has been correctly stated by Alpers and Murray,† does not take place, but by neutralizing with soda solution I have been able to obtain it after slight delay. Alpers and Murray are not quite correct in stating that the typhoid serum reaction has only been applied to blood examinations. Elsner, Gruber, and in this country W. L. Russell have used the method in a similar manner to that mentioned by Alpers and Murray for the purpose of identifying suspected organisms isolated by culture from water or fæces. In fact, this was the chief use to which the typhoid serum reaction was applied prior to the announcement of Widal's discovery.

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* *Centralblatt für Bakteriologie*, xxi, and *British Medical Journal*, December 5, 1896 (abstract in *American Medico-surgical Bulletin*, January 10, 1897.

† *American Medico-surgical Bulletin*, March 25, 1897.

CLINICAL REPORT OF

A FATAL CASE OF HÆMORRHAGE INTO THE PONS.*

By WILLIAM M. LESZYNSKY, M. D.

On the 23d of January, at 8 A. M., I was hurriedly summoned to see Mrs. X., fifty-five years of age, and the mother of six grown-up children. Upon my arrival I learned from her husband that previously she had always been in apparently perfect health, having only occasionally complained of neuralgia affecting the first and second branches of the left trigeminus.

On arising, at about 7.30 A. M., after a comfortable night's sleep, she drank her customary cup of hot coffee. While walking about the room in the act of dressing, she suddenly cried out that she felt very dizzy and was losing power on the left side. She sank into a chair and was given some whisky, which was soon vomited. I saw her about thirty minutes after the onset of the attack. She was reclining in an easy-chair. Consciousness was completely preserved; face slightly pale; pulse, 86, regular, full, and of high tension; respirations, 24 and regular She was placed in bed at once. Temperature in the mouth, 99° F. Heart's action was forcible, and there was well-marked cardiac hypertrophy without any signs of valvular lesion.

The lower facial muscles were paralyzed on the right side. On the left side the lower facial muscles were in a condition of tonic spasm. The left third nerve was paralyzed in some of its branches, as shown by complete ptosis and divergence of the eyeball. Both pupils were equally contracted to about one millimetre and a half, and absolutely immobile, failing to react to strong artificial light. She was unable to voluntarily elevate the left upper eyelid, but could close the right eye without difficulty when told to do so. Both eyeballs were fixed and immovable by voluntary effort. While the left eyeball was deviated outward, the right was in parallelism. The tongue was protruded well in the median line. There was left hemiplegia, the upper extremity being incompletely paralyzed; absolute hemianæsthesia (all forms of sensibility being affected), including the face and cornea on the hemiplegic side. The tests for muscular sense were unsatisfactory. Sensation and motility were normal on the opposite (right) side. The left knee-jerk feeble, the right active. Both plantar reflexes active. No clonus. The patient was positive in her statement that vertigo, hemiplegia, and inability to open the left eye all appeared simultaneously. She said that she had always been in good health, and had never suffered from headache, indigestion, or other ailment. She explained to me that she felt slightly drowsy, but thought it would be best for her to keep awake. She complained only of the feeling of "deadness" in the left arm, which she insisted upon rubbing with the right hand. She was able to swallow without difficulty a glass of milk and a dose of calomel. I remained at the bedside until 10 A. M. During this time there was no sign of hebetude, no mental confusion, consciousness was preserved, and there was no perceptible change in the symptoms. Pulse, 82; respirations, 24; temperature, 99.8°. I obtained urine for examination, and left the patient in charge of a trained nurse, with instructions to notify me at once in case of any change. The urine was neutral as to reaction; specific gravity, 1.004, and a large amount of albumin was present. Precipitate by centrifuge was found to contain many granular casts, a large quantity of granular matter, and numerous broken-down red blood-globules. On arising in the morning she had passed about sixteen ounces of urine.

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* Read before the New York Neurological Society, March 2, 1897.

I visited her again at 1 P. M., the nurse greeting me with the tidings that the patient had gradually fallen asleep and had been sleeping quietly since 12.30, and that the milk swallowed at 11.45 had at once been vomited.

I found her completely comatose and in a cold perspiration. Facial muscles relaxed on both sides. Both eyes closed. Pupils and eyeballs unchanged. Complete relaxation of left upper and lower extremities. Right forearm flexed upon arm and in extreme rigidity, which resisted all efforts to overcome it by ordinary force. The right lower extremity was extended, and the crural muscles were rigid. Both knee-jerks exaggerated. No clonus. Unable to swallow. Temperature in axilla, right, 99.2°; left, 99.6°; pulse, 84; respirations, 24, and regular. That we had a case of "ingravescent apoplexy" to deal with there could be no doubt, and in view of the cardiac action and forcible pulse that free venesection was indicated. This was suggested to the family, but was delayed, as their regular medical attendant, Dr. John Shrady, had been called for further consultation.

In the mean time an ice cap was applied to the head, a rectal enema given, the bladder catheterized, and another specimen of urine examined with the same result. Symptoms of uræmic poisoning were absent. At 6 P. M. the pulse was beating strongly at 88; respirations, 26; temperature, 100.6°. The rigidity on the right side was replaced by complete relaxation. At 8 P. M. the pulse was unchanged, but the vaginal temperature was 103.4°, and Cheyne-Stokes respiration was present. About sixteen ounces of blood were removed from the right median basilic vein. The blood pressure was so forcible that a continuous stream would have shot a distance of six or eight feet had it not been deflected in its course.

At this late stage very little was hoped for as a result. The arterial tension was diminished and the Cheyne-Stokes respiration subsided for a few hours. The general condition, however, remained unchanged. At midnight the pulse was 120; respirations, 40; temperature in axilla, right, 101.8°; left, 102.4°. At 4 A. M. temperature 105°. Death took place at 6.30 A. M., just twenty-three hours after beginning of attack. The ante-mortem rectal temperature was 107°. Autopsy was not permitted.

It was quite evident at the first examination that hæmorrhage had taken place in the right side of the pons, involving the pyramidal tract as well as the tegmental region, and the fibres going to the right facial nucleus, and that it had also extended across to the left crus, involving the oculo-motor nucleus.

At the second visit the clinical picture indicated the further extension of the hæmorrhage into the left pyramidal tract, either in the crus or pons, as manifested in the extreme muscular rigidity of the right extremities.

It is questionable whether a free venesection could have saved the patient, had it been undertaken either at once or as soon as there was evidence of the extension of the hæmorrhage.

This is another one of those cases in which chronic interstitial nephritis, with pronounced cardiac hypertrophy, has occasioned no symptoms that would lead the patient to seek medical advice until cerebral hæmorrhage unexpectedly terminates existence.

SPURS OF THE NASAL SÆPTUM,

AND THEIR INFLUENCE ON THE RESPIRATORY TRACT.*

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AND ASSISTANT IN DISEASES OF THE EYE, EAR, NOSE, AND THROAT,
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SPURS, ecchondroses or exostoses, of the nasal sæptum should be distinguished clinically as well as ætiologically from simple deflections or deviations. The latter are now generally believed to originate from traumatism in early life, their subsequent growth being determined largely by local conditions which, however, do not usually alter very materially the extranasal or intranasal deformity. The former may more properly be considered as true inflammatory growths resulting from plastic infiltration of the tissues involved, the exact locality of the overgrowth being determined by rather obscure causes and producing only intranasal deformity.

Deflections, if of clinical importance, affect most frequently the cartilaginous sæptum, have no relation to its sutural lines, and enlarge one nasal fossa while correspondingly occluding the other; whereas spurs are found in the majority of instances along the sutural lines and usually affect only one nasal passage or interfere with both unequally. Such differences in ætiology and anatomy would naturally suggest a lack of similarity in the clinical symptoms of the two conditions. In deflections the deformity is primary and hypertrophic changes secondary, while in spurs the sequence of morbid processes is reversed. Sæptal deviations, therefore, lead to diseases more especially the result of a mechanical obstruction to nasal respiration; sæptal spurs more commonly give rise to symptoms resulting from reflex irritation. In practice these theories will hold good, I believe, and we will observe that the symptoms resulting from these two morbid conditions, though they may often be the same when originating solely from obstruction to normal breathing, yet in the absence of nasal stenosis slight deviations will occasion no discomfort, while small spurs may produce disturbances of a reflex character. These observations are suggested by the beneficial results I have so often seen follow the removal of apparently harmless spurs in patients who were certainly not aware of any nasal stenosis. As has frequently been noted, these spurs are most commonly located along the sutural lines of the sæptum, and are the result, no doubt, of a perichondritis, hyperostosis, or both combined, and traumatism has little if anything to do with their formation. Their most common site is the junction of the triangular cartilage with the superior maxillary bone, being often bilateral.

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* Read before the Southern Section of the American Laryngological, Rhinological, and Otological Society, New Orleans, March 3, 1897.

In the minority of cases they begin in the same line, but follow the suture between the vomer and perpendicular plate of the ethmoid upward and backward. In this region they press, as has been observed, on the mucous membrane covering the middle turbinate bones and give rise to various reflex respiratory neuroses, owing to the fact that the additional nervous supply from the olfactory nerves makes this area more susceptible to irritation.

Deflections of the bony sæptum are very common, according to the investigations of Mackenzie and others on dried specimens or skulls, but these, as a rule, cause no trouble; it is the malposition or overgrowth of the cartilaginous portion which, if marked, causes trouble, because of its more exposed situation and consequent irritation from external influences. Sæptal spurs, situated as they are at the very entrance to the respiratory tract, exert a powerful influence on the whole respiratory apparatus.

The peculiar nasal twang, the dead character which the voice acquires, the so-called nasal catarrh or hypertrophic rhinitis, the chronic post-nasal and follicular pharyngitis and purulent rhinitis, are all familiar and well-known results of nasal stenosis from sæptal spurs or other conditions which interfere with normal respiration. Atrophic rhinitis is only rarely if ever caused by spurs of the sæptum, and yet I have seen a case in which the removal of an accessory tooth from one nasal fossa and a good-sized ridge from the other was followed by rapid relief of this intractable disease. The association of adenoid growths and sæptal spurs in adults in several cases under my observation has led me to believe that they are important factors in preventing the atrophy of the hypertrophied lymph tissue in the pharynx which usually, one might almost say normally, takes place about or soon after puberty. The presence of such spurs, no doubt, keeps up the irritation and vascularity which were the original cause of the overgrowth. In several of my cases there was evidently an ætiological relation as suggested.

The influence of these spurs upon deafness due to chronic catarrhal otitis media is rather doubtful; occasionally their removal is followed by good results; but in cases of unilateral deafness the deformity is about as often on the unaffected as the affected side in my experience, and no benefit from their removal can be anticipated as a rule.

Epistaxis from sæptal spurs is very common as a result of the friction of the air upon the projecting ridge, and may give rise to a suspicion of pulmonary hæmorrhage, as in the following case:

A. C. O., aged twenty-five years, came to my office on February 9, 1897, with a history as follows: Some months ago he had suffered from a very severe attack of pleuro-pneumonia, from which he rallied slowly. Occasionally since he has had small hæmorrhages which would tinge his sputum in the morning. He was anxious and consulted his physician, who, finding no abnormal physical signs in the lungs, referred him to me for examination. I found two extremely vascular and sensitive spurs, one on either side, the removal of which has caused a complete disappearance of the annoying symptom, while his general condition has also improved.

The voice suffers very frequently in my experience from the presence of these spurs, either as a result of a chronic laryngitis set up by defective nasal respiration or as a result of reflex irritation. Functional aphonia of reflex nasal origin has been reported. Their influence on the singing voice was observed years ago by Walsham, and in those occupations where this organ is used excessively, as in preaching and teaching, dysphonia and voice fatigue are very common. In such cases the removal of existing spurs from the sæptum, apparently small and insignificant, often gives the most gratifying results. Two cases in this connection illustrate the fact that the reflex element enters largely into the symptomatology of these growths.

J. N. S., minister of the gospel, came to my office in December, 1896, and complained of dysphonia and inability to use his voice for any length of time without its becoming hoarse, husky, and tired. After treating him for some time unsuccessfully for laryngitis in the usual manner, I determined to remove a small unilateral spur which I had noticed before, but judged incapable of influencing the voice. The operation, without additional treatment, was followed by a complete disappearance of the annoying symptoms.

Again, a young gentleman, F. C. P., consulted me because he was unable to continue his singing lessons satisfactorily on account of the fact that his voice would soon give out. The larynx seemed normal, and no diseased condition was found except a small sæptal spur on each side along the junction of the hard palate and cartilage. The removal of these gave complete relief.

If the results of operations on the sæptum for the relief of nasal stenosis and the resulting inflammatory diseases in the upper air-passages are gratifying, even more so are the results which follow the removal of those spurs or ridges which give rise to reflexes or neuroses.

This latter class are usually situated higher up in the nasal fossæ, are larger, and frequently project sufficiently to press upon the opposite middle turbinate membrane. Under such conditions asthma, hay fever, cervical neuralgia, cough, and symptoms complicating or simulating cardiac or pulmonary disease occur comparatively often and may be termed nasal reflexes. The influence of intranasal disorders as predisposing and exciting factors of asthma is so universally recognized that I mention the following case only as interesting:

In January, 1896, R. W. G. consulted me for severe asthmatic attacks lasting several days, and characterized by all the symptoms of an acute coryza—frontal headache, mouth breathing, etc. The openings of the nasal fossæ posteriorly would become so firmly closed from vasomotor paresis and swelling of the mucous membrane that it would be impossible to pass a probe or syringe fluids through the choanæ. Cocaine gave very little relief, and it was only after the removal of a large sæptal spur that comparative comfort was obtained.

Attacks of hay fever are oftenest relieved by operations on the nasal sæptum. Recently the reflex coughs of nasal origin have attracted considerable notice, and spurs of the sæptum are most often mentioned as causes. In the obstinate coughs following *la grippe* I have had success from intranasal operations when all other treatment had failed. Such coughs were characterized by an absence of the usual pulmonary symptoms, as fever and malaise, and, further, by being spasmodic and persistent.

Dr. Lockwood, in the *New York Medical Journal*, January 16, 1897, records some interesting intranasal reflexes in which the symptoms arising from large sæptal spurs simulated those of cardiac and pulmonary disease or complicated these conditions. He argues that these diseases predispose to obstructive lesions in the nose, and that these latter react and increase the cardiac or respiratory embarrassment. Gratifying results were reported in such cases by operation. Dr. Campbell, in the *American Lancet* of 1888, reports some stubborn cases of chronic bronchitis which were inadvertently cured by the removal of sæptal spurs. Two cases of obscure origin and commencing in the nose, recently under my care, warrant notice here.

The first, a white male, W. W. G., aged thirty-five years, came to me from Brightsville, South Carolina, on account of an irresistible hawking and spitting, sometimes followed by violent retching and vomiting. The slightest irritation would set up an attack. A probe in the nose, or a tongue depressor in the mouth, was sufficient to start a paroxysm. The pharynx was granular and dry, and some post-nasal pharyngitis was observed. A spur of considerable size, and yet not large enough to interfere with normal breathing or make the patient aware of its existence, was found in the left fossa, and rapid improvement in the symptoms followed its removal.

In the second case a large nasal ridge running up and back, pressing deeply into the opposite side, is, no doubt, causing asthmatic breathing at night and severe neuralgic pains in the ear and neck on the same side as the growth in a nervous woman aged forty years.

The correctness of one's diagnosis in all of these reflex symptoms of suspected nasal origin unfortunately, however, can only be proved by the success following the removal of the growth, and hence we can not encourage our patients in many cases with any definite expectation of relief. The removal of sæptal spurs with a good nasal saw is, however, such a simple and satisfactory proceeding that the operation should always be done when there is a reasonable chance that the spur may be the reflex or mechanical source of any persistent or stubborn disease or disturbance in the respiratory tract.

PRECOCIOUS MENSTRUATION.

A UNIQUE CASE.

By P. E. PLUMB, M. D.,
GOTHENBURG, NEBRASKA.

Reading the remarks of Dr. J. W. Irion on A Case of Precocious Menstruation, in the *New York Medical Journal* of August 15, 1896, has encouraged me to report the following case, the unique features of which are: 1. The mature development of the genital organs and mammæ; 2, the hypertrophied clitoris; and 3, the exercise by the infant of a mature sexual instinct and feeling—more prominent, indeed, than is generally found in the average woman. These facts make the case entirely unique in medical literature, or at least I am not aware that anything equal to it along this line has ever been published.

On September 30, 1895, I was asked to attend Mrs. J. L. F. in her second labor, the first child, a strong, healthy boy, being just one year old to a day. The lady is a robust and unusually healthy woman of French descent, twenty-eight years of age, her husband being a hale and hearty banker, thirty-four years of age. Both are well educated, intelligent, and refined, possessing all the comforts of life desired by them. The husband said to me: "We both are generously endowed by Nature with very strong generative instincts, and we should find it hard to feel that life was a success with us should anything occur to prevent our bringing up a large family of children."

After a short and unusually easy labor, as nearly painless as any I ever saw, during which Mrs. F. chatted and laughed continually, she was delivered of a nine-pound daughter; yes, I may almost say a grown-up daughter.

It will probably be easier for the reader to surmise than for me to explain what my astonishment was to notice the advanced state of development of the external genitalia; in size, representing those of a seven- or eight-year-old girl, but in form and development more nearly approaching those of a young woman of fifteen; the whole being covered by a liberal growth of dark-brown curly hair. The clitoris, however, was elongated and enlarged beyond that found in most women, being about an inch and a quarter long and about three lines in thickness, with the prepuce extending about a third of the length of the organ. The hair on the child's head, averaging about three or four inches in length, was of a beautiful chestnut-brown. There was no hair in either axilla. The mammæ were about an inch and a half in diameter, raised about half an inch, and their centres were surmounted by small, pink nipples, about a quarter of an inch high and the same through. The child's facial expression was clearly feminine, about like that of a delicate twelve-year-old girl, with clear-cut regular features, dark eyebrows, and well-formed mouth.

This inventory I supposed would entirely complete the list of the young lady's peculiarities, but when I called next day I was constrained to say "Will wonders never cease?" when the nurse informed me she had noticed that bathing the child's breasts seemed to make it very uneasy and that the little nipples became erect and very prominent. On my questioning her she admitted that the clitoris also acted in the same way. I then made sure of the child's sexual excitability by seeing a prompt erection of both the nipple and the clitoris whenever the former was manipulated, and erection of the clitoris alone when it was handled, these erections being accompanied by every manifestation of acute sexual excitement.

This marvelous young Hebe thrived very well, except that the least irritation from bathing, contact of clothing, etc., in the neighborhood of the clitoris was productive of so much sexual excitement that the child would be nervous and fretful for an hour or more after each period of excitement, which seemed to resemble in every way the accomplishment of a complete sexual orgasm. This condition of affairs greatly worried the mother, but she would not fully consent to allow me to amputate the child's clitoris until one morning, when the child was six weeks old, the nurse found blood stains upon the little one's diapers. An examination proved that she was actually menstruating, and she continued to do so about two days and a half. The mother stated that her child had not seemed quite so well as usual for two or three days preceding the appearance of the sanguineous discharge, and that she would cry whenever her breasts were touched. At the beginning and at the ending of this period I examined the discharge microscopically, but found no disintegrated particles of endometrium or other detritus to show that the discharge was more than a venous exudation.

A few days after the disappearance of the menstrual flow I amputated the child's clitoris as close as was possible, since which time she has only occasionally been annoyed by periods of excitability, and I may add that such periods are steadily decreasing in both frequency and intensity.

The young woman in question is now about ten months old; is a good, healthy child with chestnut-brown hair about twelve to fourteen inches in length, fine, and silky. She has an exquisitely beautiful, delicately feminine face, plump and firm mammæ, a broad pelvis, and a distinctly feminine form generally. She has continued to menstruate regularly every six weeks, the periods usually lasting two days and a half, never longer. A recent microscopical examination of the discharge shows no change in its character or composition.

I trust I may not be censured for going so much into detail, for I have recounted the facts thus minutely to enable those especially interested in anomalies of development to obtain a clear view of the case from which to formulate their opinions. Need I say that I shall watch with unexampled interest this formidable young woman's future?

The Buffalo Academy of Medicine.—At the last meeting of the Section in Obstetrics and Gynæcology, on Tuesday evening, the 25th ult., Dr. A. L. Benedict was to read a paper on Infantile Dyspepsia, its Prophylaxis, Results, and Treatment, and Dr. Irving Snow was to report a case of Acetanilide Poisoning in a Newly Born Child, Absorption from the Umbilical Wound.

MEASLES
COMPLICATED BY LARYNGEAL DIPHTHERIA.
INTUBATION. RECOVERY.

By BURT RUSSELL SHURLY, M. D.,
LARYNGOLOGIST TO THE DETROIT POOR COMMISSION AND BOARD OF HEALTH.

THE comparatively rare occurrence of authenticated cases of laryngeal diphtheria complicating measles, and the exceedingly grave prognosis of this condition, have prompted me to report the following result:

A boy four years and eight months old was seen by me, in consultation with Dr. F. N. Henry and Dr. Toepel, December 17, 1896. The following history was then presented: The child exhibited the usual prodromal symptoms of measles. Acute coryza developed ten days ago. Exposure occurred ten or twelve days previous. There was a typical mottled rash four days after onset. The catarrhal symptoms had been greatly exaggerated. The cervical glands were enlarged. Examination of the pharynx revealed nothing more than an acute pharyngitis. Four days after the eruption appeared croup became manifest, and thirty-six hours later all the attending phenomena of a laryngeal stenosis—labored breathing, retraction of the chest wall, restlessness, and cyanosis—developed in a marked degree. Fifteen hundred units of Parke, Davis, & Co.'s antidiphtheritic serum were injected by Dr. Henry, and I performed intubation, a three to four years' tube being placed in the larynx. This was immediately expelled, together with a piece of thick gray membrane three fourths of an inch in length. Reinsertion gave perfect relief. The culture and exudate were carefully examined by the bacteriologist of the board of health and Klebs-Lœffler bacilli reported present, determining that this was a diphtheritic membrane engrafted upon the laryngitis of measles. Forty-eight hours after tubage a temperature of 105.4° developed, attended with increased bronchial irritation. No consolidated areas were found, however, and the fever gradually subsided. The tube was removed on the fourth day, ninety-two hours after operation, and considerable dysphonia promptly returned. This responded rapidly, however, to continuous steam inhalation, and the patient made a perfect recovery.

In referring to the literature of measles, I am able to find but few authenticated cases with recovery. The complication is exceedingly grave.

Therapeutical Notes.

Irritable Bladder after Confinement.—Professor W. E. Fothergill, of Edinburgh, says the *Practitioner* for May, gives a tablespoonful of the following mixture three times a day in post-partum irritability of the bladder:

℞ Salol,
Tincture of hyoscyamus, } each... 2 drachms;
Infusion of buchu, enough to make 6 fluid ounces.
M.

THE
NEW YORK MEDICAL JOURNAL,
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Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JUNE 5, 1897.

ZOSTER AND FACIAL PARALYSIS.

Dr. Hermann Eichhorst, of Zürich, contributes to the *Centralblatt für innere Medicin* for May 8th an article on this subject, in which he incorporates the history of a case that has come under his own observation. He remarks that, although attention has repeatedly been called to the connection between zoster and facial paralysis, their actual concurrence is so rare that very experienced physicians have never witnessed it, and Ebstein, who wrote in 1895 on the nervous disturbances of zoster, with special reference to paralysis of the facial nerve, was able to collect only eleven published accounts of cases of the occurrence of the two affections in the same person within a short time. To these Ebstein added a case of his own. In his collection, however, says Eichhorst, Ebstein failed to include cases reported by Hess, Gellé, Hoffmann, Darasbeth, and Spencer.

Dr. Eichhorst's case was that of a brewer's wife to whom he was called in consultation in December, 1896. She was a young woman of a very healthy family and of powerful build, but somewhat pale. There had been no nervous diseases among her relatives, and the patient herself had always been in good health. She had been married for eight years and had had three normal deliveries. On Sunday, December 12th, she attended a theatrical representation. The place was very windy, and she was positive that it was the left side of her face almost exclusively that was exposed to the breeze. On the following day she noticed slight drawing sensations, almost painful, in the right side of her face; in particular, the region of the right eyebrow was slightly sensitive on pressure. There were sharp pains in the back of the neck on the right side, streaming up toward the occiput. Her condition remained unchanged until the third day, when the striking symptoms subsided, but she remarked instead stiffness and immobility of the whole right half of the face, and her physician ascertained that there was complete facial paralysis of the right side.

Four days later a bullous enanthem and exanthem appeared, breaking out simultaneously on the lower half of the right ear, in the external auditory meatus of the right side, on the right half of the tongue, on the mucous membrane of the right half of the hard palate, and on the right half of the uvula. On the mucous membrane of the mouth there were to be seen groups of small, white elevations standing close together and each surrounded by a red areola. The tongue was heavily coated, but more so on the right side than on the left, and the right half of it was swollen. In about a week these lesions and those on the ear were healed, but a few little red spots remained on the mucous membrane of the hard palate as late as the third week.

The facial paralysis went on to the degree of manifesting the electrical reaction of degeneration and exalted sensitiveness of the paralyzed muscles to mechanical irritation; with this, the contractions of the muscles were slow. The tongue was protruded straight, and there was no obliquity of the uvula. The sense of touch and that of taste were throughout quite the same in the two halves of the tongue. There was no disturbance of the hearing. The sensibility of the skin of the face was unchanged. There was no sensitiveness on pressure at the points of emergence of the trigeminal and facial nerves. No abnormity of the internal organs could be made out on examination.

Rare as the occurrence of zoster and facial paralysis in quick succession is, says Eichhorst, it is still rarer for the zoster to follow the paralysis, as it did in this instance. The rule is the reverse, and his case is one of only four exceptions. The three others were reported by Tryde, Verneuil [Eichhorst writes it "Vernueil," but we presume Verneuil is meant], and Remak. According to the observations thus far recorded, adds the author, facial paralysis occurs most commonly in the course of occipito-cervical zoster, and in all those cases the herpetic eruption has preceded the palsy; on the other hand, in all the cases in which the paralysis has preceded the eruption the zoster has appeared in the areas of branches of the trigeminus. It is self-evident, he remarks, that four cases are too few to serve for generalizing, and at present we shall have to rest content with the facts. In only Remak's case and his own, he continues, so far as he knows, has a zoster connected with facial paralysis affected a mucous membrane, and in Remak's case it was only that of the tongue. It is of great interest, he adds, that in both cases the sense of taste was not affected.

It is a common and well-known occurrence, says Eichhorst, for gustatory paralysis of the anterior two thirds of one half of the tongue to exist without herpes of the tongue in cases of facial palsy of peripheral origin. It follows, however, from Remak's case and his own that there are also instances of peripheral facial paralysis in which the tongue retains the sense of taste unrestricted, while herpes occurs on the half of the tongue on the paralyzed side. We must therefore conclude that the chorda tympani carries two kinds of nerve fibres—one to serve the sense of taste and the other capable of giving rise to trophic changes such as herpes, and the latter may be vasomotor or purely trophic. As regards this point, says Eichhorst, Remak's case is particularly important because the eruption was limited to the tongue, whereas in his own it affected also the ear and the external auditory meatus, so that the trouble is to be sought for in the third branch of the trigeminus also. In view of the slight cutaneous development of the eruption in his own case, he thinks it probable that it was the peripheral portions of the trigeminal branches that were affected, and that the lingual herpes was due to an extension of the inflammation from the trunk of the facial nerve to the chorda tympani. It is consistent with our knowledge, he says, to assume that in this case only the trophic nerve fibres were affected, while the gustatory were spared.

ITEMS.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 1, 1897:

DISEASES.	Week ending May 25.		Week ending June 1.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	14	3	7	0
Scarlet fever	169	11	205	14
Cerebro-spinal meningitis	2	0	0	0
Measles	279	9	220	10
Diphtheria	310	41	256	38
Croup	7	2	2	0
Tuberculosis	236	103	136	108

Reciprocity in Medical Licensing.—Dr. William Warren Potter, of Buffalo, president of the National Confederation of State Medical Examining and Licensing Boards, chose this for the subject of his address at the seventh annual meeting of that body, held in Philadelphia on May 31st. He first paid tribute to the memory of Dr. Perry H. Millard, of St. Paul, then in an introduction reviewed some of the essential points of progress that had been made in State control of medical practice, and finally considered his subject.

The most important question to be discussed, he said, pertained to the inter-State exchange of licenses, and every friend of State control was interested in establishing this principle. It was one of the objects the confederation was laboring to accomplish, but a most difficult problem for solution. A national registration bureau was desirable where legally qualified and reputable physicians might be recorded—physicians whose names appeared on this register to be allowed to pass from State to State in the enjoyment of all privileges pertaining to the practice of medicine. Those chiefly agitating the question of reciprocity, however, were specialists who desired to spend profitable vacations at summer resorts and did not relish the idea of taking State examinations in the localities chosen for their holiday practice. Another class of men, compelled by circumstances to change residence, was more deserving of sympathy; they took the examinations uncomplainingly. Should a State require of its own citizens a compliance with its practice laws while granting to thrifty summer specialists exemption from their operation? As the State laws forbade discrimination against the inhabitants of each, there was both a legal and a moral bar to such exemptions.

Equality of standards for admission to the study and practice of medicine was the only enduring basis on which reciprocity could be established. When the several States adopted a uniform level of preliminaries—a uniform period of collegiate training, including uniformity of methods of teaching—and, finally, an absolute similarity in the methods of conducting State examinations and granting licenses, then reciprocity would be equitably and permanently established. It was important for the State medical examiners to come to an agreement on these several points, that they might act with intelligence on a common platform. The State imposed a post-graduate examination, and none should be admitted to it who were not holders of diplomas legally obtained from registered and recognized colleges. It was understood, of course, that there must be established a uniform system of recognizing and registering medical schools in the several States.

The remedies lay in legislative enactments. Those who most loudly and persistently demanded inter-State indorsement aimed their criticisms at examining boards; whereas these had nothing to do with the question. The statutes in States that had established licensure prohibited inter-State exchange, except between such as had equality of standards. The demands of the restless and migratory doctors must be taken to the State legislative halls. Meanwhile the members of this confederation might assist in bringing the matter to a more speedy conclusion by acquainting their legislatures with the difficulties to be overcome, and by urgently recommending the adoption of such amendments to existing laws as would meet and remove the present defects. Great care must be exercised, however, in the preparation of amendments; the State laws were for the public weal, reciprocity was only for the few. Amendments to existing statutes should be proposed only through State medical examining boards or State medical societies; they were familiar with the defects and best knew the remedies needed. When legislatures could be persuaded to turn a deaf ear to all amendments that were proposed outside of official sources, it would be a happy day for the friends of State license. The object of this discussion was to divert further criticism of the delay of reciprocity into the proper channel. If legislators could be made to appreciate the fact that public health interests were involved in the question of State license, that every attempt to weaken the principle was a blow at public sanitation, and that higher standards of medical education meant better health for the people, then perhaps it would be easier to obtain and maintain the necessary laws to protect the commonwealths against that kind of ignorance, superstition, or super refinement that always lurked in the environment of quackery.

The Fiftieth Annual Meeting of the American Medical Association.—The committee of arrangements, foreseeing an unusually large attendance at the "jubilee" meeting, did well to give early notice of the necessity of engaging hotel accommodations in advance. The need of this was all the greater in view of the gathering known as the "commercial museums" being held at the same time. This mercantile convention, which was formally opened on Tuesday, is very largely attended, and, what with that and the American Medical Association, the hotels of Philadelphia have been taxed to their utmost capacity. The consequence has been that a number of physicians who had come to attend the association's meeting were unable to obtain proper quarters. Some are reported to have left before the meeting was over on account of this difficulty. Nevertheless, the attendance remained very large. More than fourteen hundred had registered by Tuesday evening, and additional registration went on as the meeting proceeded.

The meeting was opened at ten o'clock on Tuesday morning in the Academy of Music. The address by the president, Dr. Nicholas Senn, of Chicago, was in great part a tribute to the past and present importance of Philadelphia as a medical centre, and a picture of what had been accomplished, largely through the instrumentality of the association, in raising the standard of medical education in the United States during the last fifty years. Dr. Senn predicted that in the course of twenty-five years more our country would become the centre of medical education in general, and our medical institutions would be sought after by foreigners, for by that time they would have facilities for teaching far in advance of those of any other country.

The movement to erect a monument to the memory of Dr. Benjamin Rush received a powerful impetus from the closing portion of the president's address and from the spirited remarks with which Dr. Albert L. Gihon, of the navy, reported progress for the committee appointed to raise funds for the purpose. All this gave rise to unwonted enthusiasm. Several substantial subscriptions by individuals were the immediate result, and pledges were given of still larger sums to be raised in the States to which the various speakers belonged. The amount which it has been decided to raise is a hundred thousand dollars.

The morning session of Wednesday was made notable by the presence of the President of the United States, who made brief but very acceptable remarks, and by an excellent speech by the governor of Pennsylvania. The scientific work of the sections was quite up to the mark usually reached.

At the last accounts received at this office it is thought probable that the nominating committee would report the name of Surgeon-General Sternberg, of the army, for the presidency.

The exhibits of the publishers, instrument-makers, pharmacists, etc., were large and of an interesting character. Particular interest was excited by a Röntgen-ray apparatus made by the Edison Company.

The weather for the first two days was uncommonly cool for the time of year, and that fact added materially to the enjoyability of the meeting. On Thursday, however, the atmosphere began to get somewhat oppressive, owing to a rise of temperature and the concomitant cloudiness, and getting about from one place to another was less agreeable; but by that time the bulk of the real work had been done, and the gentlemen in attendance were at liberty to take things in a leisurely way. Thanks to Dr. Hare and his committee, the general sessions and the section meetings were all held in places situated within a very small area, so that there was little necessity of hastening from place to place. All things considered, the meeting was one of the most successful in the history of the association, as it was certainly the best attended.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 3d inst., Dr. William H. Thomson was to read a paper on Persistent Tachycardia with Digestive and Nervous Disorders, which was to be discussed by Dr. A. Jacobi, Dr. Ira Van Gieson, Dr. C. A. Herter, Dr. C. L. Dana, Dr. F. P. Kinnicutt, and Dr. Richard Van Santvoord.

The Medical College of Virginia.—Dr. Ernest C. Levy has been elected professor of histology, pathology, and bacteriology, Dr. Henry C. Jones has been elected professor of dentistry, Mr. Frank M. Reade has been elected professor of pharmacy, and Dr. Robert F. Williams has been elected professor of materia medica, therapeutics, and organic chemistry.

Changes of Address.—Dr. J. J. M. Angear, to No. 143 South Western Avenue, Chicago; Dr. Joseph D. Anway, to State and Washington Streets, Chicago; Dr. Charles W. Larned, to No. 1327 Park Avenue, Baltimore.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Week ending May 22, 1897:*

BEYER, H. G., Surgeon. Ordered to the Naval Museum of Hygiene for temporary duty in connection with the preparation of new microscopical outfits for ships and hospitals.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 23 to May 29, 1897:*

LEWIS, WILLIAM F., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month.

MCCULLOCH, CHAMPE C., Jr., Captain and Assistant Surgeon, is granted leave of absence for three months, to take effect on or about June 1st.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Two Weeks ending May 22, 1897:*

WHEELER, W. A., Surgeon. Granted leave of absence for four days from May 17, 1897.

BANKS, C. E., Surgeon. To inspect service at New York, N. Y., Boston, Mass., Providence, R. I., New Bedford, Mass., Portland, Me., and Vineyard Haven, Mass. April 27, 1897.

CARRINGTON, P. M., Passed Assistant Surgeon. Granted leave of absence for thirty days from May 26, 1897.

PETTUS, W. J., Passed Assistant Surgeon. Granted leave of absence for seven days from May 11th, with permission to apply for extension. May 10, 1897.

STONER, J. B., Passed Assistant Surgeon. To assume temporary command of Cape Charles Quarantine Station during the absence of Passed Assistant Surgeon W. J. Pettus. May 10, 1897.

GARDNER, C. H., Passed Assistant Surgeon. To proceed from Baltimore, Md., to Norfolk, Va., for temporary duty, upon completion of which to rejoin his station at Baltimore. May 10, 1897.

MCMULLEN, JOHN, Assistant Surgeon. To report to medical officer in command of service at Baltimore, Md., for duty. May 15, 1897.

BAILHACHE, P. H., Surgeon. Detailed to represent the service at the meetings of the American Medical Association to be held in Philadelphia, Pa., June 1 to 4, 1897. May 20, 1897.

STONER, G. W., Surgeon, and IRWIN, FAIRFAX, Surgeon. Detailed to attend the meetings of the American Medical Association. May 20, 1897.

PROCHAZKA, EMIL, Assistant Surgeon. When relieved at Reedy Island Quarantine, on or about May 28th, to report at bureau for physical examination. May 20, 1897.

THOMAS, A. R., Assistant Surgeon. To proceed from Boston, Mass., to Reedy Island Quarantine for duty, to arrive there on May 28, 1897.

GREENE, J. B., Assistant Surgeon. To proceed on May 23d from Detroit, Mich., to Evansville, Ind., for temporary duty. May 18, 1897.

GRUBBS, S. B., Assistant Surgeon. To report to medical officer in command, New York, N. Y., for temporary duty, May 18, 1897. To proceed from New York, N. Y., to Detroit, Mich., for temporary duty. May 22, 1897.

Appointments.

JOHN MCMULLEN, of Maryland, commissioned as Assistant Surgeon. May 12, 1897.

SAMUEL B. GRUBBS, of New York, commissioned as Assistant Surgeon. May 17, 1897.

Society Meetings for the Coming Week:

MONDAY, *June 7th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vermont, Medical Association; Providence, Rhode Island, Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *June 8th:* Medical Society of the State of North Carolina (first day—Morehead City); Medical Society of Delaware (first day—Rehoboth); Massachusetts Medical Society (first day—Boston); Oregon State Medical Association (first day—Portland); New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Chenango (annual), Erie (semiannual—Buffalo), Genesee (annual—Batavia), Oswego (annual—Mexico), Rensselaer, Schenectady (semiannual—Schenectady), Warren (annual—Lake George), and Wyoming (Warsaw), N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Kentucky; Richmond, Virginia, Academy of Medicine and Surgery.

Wednesday, *June 9th:* South Dakota Medical Society (first day—Mitchell); Medical Society of the State of North Carolina (second day); Medical Society of Delaware (second day); Massachusetts Medical Society (second day); Oregon State Medical Society (second day); New York Pathological Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital; Doctors' Club of the City of New York; Medical Societies of the Counties of Albany, Dutchess (semiannual—Poughkeepsie), and Montgomery (semiannual—Fonda), N. Y.; Middlesex, N. J., County Medical Society (annual); Rhode Island, R. I., County Medical Society (annual—Providence); Philadelphia County Medical Society.

Thursday, *June 10th:* South Dakota Medical Society (second day); Medical Society of the State of North Carolina (third day); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; New York Laryngological Society; Medical Societies of the Counties of Cayuga, Cortlandt (annual), and Fulton (semiannual), N. Y.; South Boston, Massachusetts, Medical Club (private); Pathological Society of Philadelphia.

Friday, *June 11th:* Medical Society of the State of North Carolina (fourth day); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.

Saturday, *June 12th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Married.

Friend—Mendel.—In Milwaukee, on Thursday, May 27th, Dr. Samuel Friend and Miss Elsie Mendel.

Hamilton—Hereford.—In Baton Rouge, Louisiana, on Wednesday, May 19th, Dr. Claude Hamilton, of Greenville, Alabama, and Miss Daisy Hereford.

Hirth—Gallum.—In Milwaukee, on Wednesday, May 26th, Dr. George J. Hirth and Miss Ella Gallum.

Kinsman—Wentworth.—In Cambridgeport, Massachusetts, on Monday, May 24th, Dr. Charles F. Kinsman, of Burlington, Vermont, and Miss Bertha May Wentworth.

Died.

Kimbley.—In Owensboro, Kentucky, on Monday, May 24th, Dr. John F. Kimbley.

O'Leary.—In Providence, Rhode Island, on Tuesday, June 1st, Dr. Charles O'Leary, aged sixty-five years.

Pattee.—In Boston, on Tuesday, June 1st, Dr. Asa F. Pattee, aged sixty-two years.

Letters to the Editor.

PREPARATIONS OF DIPHTHERIA ANTITOXINE.

Greeley, Colo., *May 19, 1897.*

To the Editor of the New York Medical Journal:

Sir: The report of the American Pædiatric Society in your *Journal* of May 15th would seem to make it imperative that antitoxine should be used in all cases of diphtheria.

Toward the close of their report they say: "Of the products on the market, some have, by test, been found to contain from one half to one third of the antitoxine units stated on the label. Select the most concentrated strength of an absolutely reliable preparation."

I shall feel greatly obliged to this committee if they will inform us through your *Journal* which are the absolutely reliable preparations.

C. D. Nelson, M. D.

THE PREPARATION OF NUTRIENT AGAR-AGAR.

Fort Schuyler, Station X, New York, *May 14, 1897.*

To the Editor of the New York Medical Journal:

Sir: Respectfully referring to the article in your last *Journal,* by Dr. Sheffield, on A Simple Method of Preparing Nutrient Agar-Agar, permit me to say that I have found an Arnold's sterilizer a very convenient substitute for the hot-water funnel. I cover the funnel with a large watch glass and insert the stem in the neck of a sterilized flask plugged with sterilized cotton, then place all in the sterilizer. Filtration is rapid and safe.

Timothy E. Wilcox, M. D.,
Surgeon, United States Army.

Proceedings of Societies.

AMERICAN ORTHOPÆDIC ASSOCIATION.

Eleventh Annual Meeting, held in Washington, on Tuesday, Wednesday, and Thursday, May 4, 5, and 6, 1897.

The President, Dr. Samuel Ketch, of New York, in the Chair.

The President's Address: The Work and Influence of the American Orthopædic Association.—The President said that in the ten years that the association had been in existence 323 papers had been presented to it. Of these, 35 had been on hip-joint disease, 19 on disease of the knee joint, 49 on Pott's disease of the spine, 20 on lateral curvature, 43 on clubfoot, and 79 on spastic paraplegia. These figures alone were a sufficient refutation of the oft-made charge that orthopædic surgery was too narrow a specialty. It was a matter for congratulation that to-day orthopædic surgery was as much a recognized branch as the other surgical specialties were, whereas ten years ago systematic instruction in this branch was only attempted in three of our medical schools. This desirable change had been effected largely through the instrumentality of the American Orthopædic Association, and it was safe to say that orthopædic surgery had forever passed out of the hands of instrument-makers, quacks, and bone-setters. Probably the day was not far distant when it would have a journal devoted exclusively to its interests. The address closed with memorial sketches of some of the deceased members, notably of Dr. Henry G. Davis, the originator of extension in joint diseases, who has been styled "the father of American orthopædic surgery."

Erasion of the Knee Joint with Conservation of the Epiphyseal Cartilages.—Dr. Harry M. Sherman, of

San Francisco, presented a paper on this subject. He reported three cases in which total arthrectomy and epiphysectomy had been performed, the epiphyseal cartilage being preserved. Although all three patients had been discharged from the hospital with straight limbs, flexion had occurred subsequently, and that, too, in spite of a plaster-of-Paris splint. A Röntgen picture of one of them seemed to indicate that this flexion was due to the fact that there had been a greater development of bone from the anterior than from the posterior cartilage. The value of the epiphyseal cartilage was well shown in one case in which sloughing had caused destruction of all of this cartilage with the exception of a circumferential band. In this case there had been sufficient growth from the remaining band of cartilage to maintain the length of the limb. The speaker also referred incidentally to the advantages in some cases of early exploratory punctures, with the idea of ascertaining the situation of tuberculous foci.

Dr. Charles L. Scudder, of Boston, said that if the flexion did not exceed eight or ten degrees it was not to be considered objectionable, for, in reality, it added to the patient's comfort.

Dr. R. W. Lovett, of Boston, said that his personal experience with arthrectomy had been very discouraging, while his conservative treatment of cases of knee-joint disease had yielded quite satisfactory results.

Dr. W. R. Townsend, of New York, had not found excisions in adults as satisfactory as in children, and thought the indications pointed to an earlier operation.

Dr. Blanchard, of Chicago, said that his experience had been directly the reverse, having been better with adults.

The President said that he had known the flexion occurring after operation to be so great as to equal the original deformity. In his hands the conservative mechanical treatment of knee-joint disease had given satisfaction.

Dr. Sherman said that, as we knew the commoner situations of the disease foci in joint disease, we could with much advantage explore for them with the aid of a small trephine. The most notable exception to this was to be found in the hip joint, which, owing to its depth, should not be subjected to such exploratory punctures.

Traumatic Spondylitis.—Dr. Arthur J. Gillette, of St. Paul, reported three cases of traumatic spondylitis. In the first case, after a slight traumatism there had followed rigidity of the spine, pain, and a slight kyphosis in the dorsal region. The autopsy showed that throughout the vertebral column the vertebræ had become so spongy that they could be crushed with the fingers. The crest of the ilium, the sternum, and the ribs were found in like condition. The second patient was a farmer, thirty-five years of age, who had received a severe sprain of the back. In his case the autopsy showed the spinal cord intact, but the membranes softened. Both the anterior and posterior segments of the vertebræ were carious. In the upper dorsal region there was a sinus communicating with the left pleural cavity. The third patient, also a vigorous man, had symptoms and signs of vertebral caries after an injury to his back. The post-mortem examination showed that the spongy portions of several vertebræ had been reduced to a dark pulp.

Spondylolisthesis.—Dr. R. W. Lovett reported a case which he thought might be fairly classified as an example of this rather rare condition. The patient, a youth of eighteen, was injured by a wagon weighing over two thousand pounds passing over his pelvis. There was no discharge of blood from the urethra or rectum, and after a week or two in bed he began to go around with the aid of crutches. When first seen by the speaker, last September, he walked in a bent attitude, leaning to the right. Movement in all directions was painful. The knee reflexes were normal, and the aspect of the case was that of severe lumbar disease with abscess. The shape of the hips, however, was almost like that in a congenital dislocation of the hips, but the trochanters were on Nélaton's line. The trochanters appeared unduly prominent, and the lumbar spine apparently projected forward abnormally, while the sacrum was in a normal position. A plaster-of-Paris jacket was applied, under suspension, and it afforded marked relief. In February of the present year he was so much better that a laced jacket was substituted. A few days ago he had been discharged from treatment because all the symptoms had disappeared, motion was no longer painful, and he was not conscious of any disability. Dr. Lovett said that, according to Neugebauer, there were about ninety cases of spondylolisthesis on record. It was probably due to a congenital deformity or a defect of development, as a result of atrophy from pressure.

Dr. Newton M. Shaffer, of New York, said that he had seen one case resembling the case just reported in the condition of the hip, and another case in which the resemblance consisted in the marked lordosis with apparent dropping away of the spine from the sacrum.

The President referred to a case exemplifying the fact that sometimes marked symptoms might be present during life, as in Dr. Gillette's case, and yet comparatively little be found at the autopsy. The case was that of a young lady who had a well-marked protrusion of the dorsal spine, with complete paraplegia of the lower extremities and transient paraplegia of the arms. The girl had come to him originally on account of round shoulders. The paraplegia had developed about six months after treatment had been begun with an antero-posterior apparatus. After having been on a water-bed for two years, she died of exhaustion. The post-mortem examination had been made by Dr. T. H. Myers, and no lesion found in any of the vertebræ. The pathologist who had had charge of the examination of the spinal cord had never made a report upon it. No organic lesions were found, and yet those who had seen the patient during life felt convinced that it was neither a case of hysteria nor one of malingering.

Dr. William J. Taylor, of Philadelphia, recalled a case of operation for supposed tumor of the spine. No disease of the vertebræ was found. The whole of the central portion of the cord was diseased, although there was no thickening of the cord itself.

Dr. Shaffer said that the cases just reported had reminded him of one which he thought was so interesting that he desired to place it on record. One of his patients with Pott's disease, now twenty-five years of age, had been under his observation since the age of six years. He had occasionally been troubled with cough and some lung irritation, and at such times had discharged through the mouth small spiculæ of the cancellous structure of the vertebræ. This showed that it was possible for an abscess to penetrate the pleura and lung without producing any extensive disturbance.

The Treatment of Torticollis.—Dr. E. G. Brackett, of Boston, read a paper on this subject, reporting four cases by way of illustration. He said that there were three main steps in the treatment, viz.: 1, Overcoming the contracted structures lying superficial to the deep layer of fascia, 2, Further stretching of the deeper structures, such as the ligaments and muscles, 3, The readaptation of the muscles to their new position—in other words, overcoming what might perhaps be called the "habit" of holding the head in an abnormal position. While an operation was almost always the first essential step in the treatment, a very important part of the after-treatment consisted in securing a proper readaptation of the muscles by systematic massage and exercises. The method that he advocated consisted in placing the patient in the recumbent posture, with a "roll" under the neck, and the head turned to the opposite side,and while he was in that position first making deep massage on the contracted tissues and on the opposite trapezius. The next step was to make forcible manipulations by which the head was depressed to the point of tolerance. Lastly, with the head placed as nearly as possible in the correct position, the patient should be given exercises with heavy dumb-bells.

Dr. Brackett then called attention to a rather alarming complication that he had met with in one of his cases, which apparently had not been described. While the patient was under the anæsthetic, on his attempting to correct the position of the head, the pulse and respirations had quickly changed their character, and the symptoms were so urgent that the head was at once allowed to fall back into its original position. Several attempts were made to correct the position of the head, but each time with a return of the unpleasant symptoms, and it finally became necessary to rest content with a lesser degree of contraction. Subsequent attempts at correction produced a like result, but to a lesser degree, and even now it was possible to produce these symptoms by correcting the position of the head beyond a certain point. The explanation of this complication was probably that the vagus had also become shortened, and that undue tension was made upon it in the efforts at reduction of the deformity.

Dr. Leroy W. Hubbard, of New York, referred to a recent case of congenital torticollis in which, in spite of the fact that the girl was twenty-eight years of age, he had succeeded in obtaining a good result. He had operated by the open incision last January, dividing the sterno-mastoid and trapezius and other contracted parts and thoroughly stretching them under ether anæsthesia. The head had then been overcorrected and put up in plaster. The position had been changed from time to time, and after a while a spinal apparatus with a Taylor chin-piece had been used. This had been worn about two months, and during this time she had been subjected to practically the same kind of manipulations as had been recommended in Dr. Brackett's paper. This part of the treatment was of very great importance.

Dr. Shaffer was of the opinion that certain cases of torticollis could be relieved by the exercises and massage, or by forcible intermittent traction without resort to a cutting operation.

Dr. William J. Taylor divided cases of torticollis into three classes—viz.: 1. Those in which cutting the sterno-mastoid was occasionally sufficient. 2. Those in which it was necessary to resect the spinal accessory nerve just before it entered the muscle. 3. Those in which it was necessary to cut the nerves supplying the posterior muscles of the neck. He had successfully employed practically the same method of exercises as Dr. Brackett.

Dr. Blanchard said that he had always found it necessary to begin with an operation.

Dr. A. J. Steele, of St. Louis, believed that in the chronic cases an operation was absolutely necessary. He preferred to apply the plaster of Paris around the head and trunk in such a manner as to leave the neck free, as this was more comfortable for the patient. The dressing should be reinforced by an anterior and posterior strip of wire gauze incorporated in the plaster. Instead of the subsequent laborious manipulations, he suspended his patients by the occipito-mental strap, carrying one end of the bar far out and the other near the centre, thus securing the desired traction on the head.

Dr. Lovett said that he had seen two cases presenting a condition the reverse of torticollis—*i. e.*, congenital elevation of the shoulder. When the head was put in the position of torticollis, the shoulder would come down. Through a long incision, he had made a dissection, and had divided most of the muscles connected with the scapula, but the result had not been good. He had subsequently seen a child in whom the sterno-mastoid and posterior muscles were absolutely shortened. In this case there was little or no tendency to displacement of the head, but if the head was put in a position of torticollis the shoulder would descend.

Dr. Shaffer said that he had seen one case in which, instead of a unilateral contraction, there had been contraction of both sterno-mastoid muscles, producing a forward position of the head closely resembling that observed in Pott's disease. It would seem that, instead of a lesion of the nerve on one side, with degeneration of the muscle, there had been a double lesion of both nerve and muscle.

Dr. Brackett said that he had not advocated these exercises as a substitute for the cutting operation, but only as a valuable method of after-treatment.

(To be continued.)

Book Notices.

Genito-urinary Surgery and Venereal Diseases. By J. William White, M. D., Professor of Clinical Surgery, University of Pennsylvania, and Edward Martin, M. D., Clinical Professor of Genito-urinary Diseases, University of Pennsylvania. Illustrated with Two Hundred and Forty-three Engravings and Seven Colored Plates. London and Philadelphia: J. B. Lippincott Company, 1897. Pp. xix–1061.

Specialists and general practitioners will welcome in the present work something new and up to date upon the subject of venereal diseases. Dr. White's enormous experience in the clinics of Philadelphia, as well as his extended studies abroad, entitles him to speak with authority upon these subjects. Nevertheless he does not exercise that authority to the discredit of the opinions of others. Though entertaining views of his own, he shows a deferential respect for those of others, and gives them fair statement and generous discussion.

The old as well as the new methods of treatment are discussed, and the authors of each, so far as known, are given due credit for their work.

The chapters on injuries and diseases of the urethra and bladder are encyclopædic in their character. The operative surgery of the parts is accurately and minutely described. The section upon injuries and diseases of the kidneys is not usually found in books upon genitourinary diseases. This involves a chapter on uranalysis. Both these subjects are handled from a surgical point of view. They are practical and to the point, though doubtless the pathologists would find much to add to them. Dr. White still adheres to his belief in castration as the safest and most effectual treatment of hypertrophied prostate. We are surprised, however, at the high mortality of the operation. It is true that the later series of cases reduces this percentage very greatly, but even a mortality of ten per cent. from an operation which is generally looked upon as comparatively free from danger is rather startling.

As a work of reference and as a practical guide, the book, we believe, will take high rank with all classes of practitioners.

Handbuch der Gynäkologie. Bearbeitet von E. Bumm, Basel; A. Döderlein, Leipzig; H. Fritsch, Bonn; K. Gebhard, Berlin; O. Küstner, Breslau; H. Löhlein, Giessen; W. Nagel, Berlin; R. Olshausen, Berlin; J. Pfannenstiel, Breslau; A. von Rosthorn, Prag; R. Schaeffer, Berlin; J. Veit, Leiden; F. Viertel, Breslau; G. Winter, Berlin. In drei Bände. Herausgegeben von J. Veit, Leiden. Mit zahlreichen Abbildungen. Wiesbaden: J. F. Bergmann, 1897. Pp. vi–3 to 814.

This second volume of an encyclopædic work offers many points of interest to the student of gynæcology. The most important section in the volume, at least so far as novelty of material is concerned, includes the diseases of the bladder, by Fritsch, and the physical examination of the bladder, by Viertel. This region, with the associated ureters and kidneys, has furnished the most recent field of research in gynæcological diagnosis and therapeutics. The function which endoscopy and ureteral catheterism have performed in this field is a most important though somewhat overrated one. The entire subject is exhaustively treated in this work. The various inflammations, irritations, new growths, and parasites of the bladder are discussed with thoroughness and perspicuity. The pictorial portion of these chapters is especially useful. Two hundred and forty-nine pages are occupied with these subjects. Then follow a hundred and fifty pages on the inflammations of the uterus, by Döderlein, and an additional twenty pages, by the same author, on atrophy of the uterus. What is most noteworthy in this discussion is the attention given to the rôle of the bacteria in uterine inflammations. While the normal uterus is bacteria-free, the inflammatory conditions abound in bacterial elements. The remainder of the volume is occupied with the subject of myoma uteri in its various aspects, the various chapters being contributed by Gebhard, Veit, Schaeffer, and Olshausen. Excellent as are these contributions, and eminently suitable as they are for this encyclopædic work, they contain much with which the gynæcological world is entirely familiar. The final chapter, on myoma in its various relations to pregnancy, by Olshausen, is fresh and suggestive. One is impressed, as much as by anything in this volume, by the enormous literature which has accumulated upon these various subjects. The authors who have been cited are numbered not by scores, but by hundreds, and one becomes appalled by the very wealth of resources with which the writers of this book have been surrounded in the course of its preparation.

Syringomyelia. An Essay to which was awarded the Alvarenga Prize for the College of Physicians of Philadelphia for the Year 1895. By Guy Hinsdale, A. M., M. D., Fellow of the College of Physicians of Philadelphia and of the American Academy of Medicine, etc. Philadelphia: The International Medical Magazine Company, 1897. Pp. 3 to 74. [Price, $1.]

This little volume contains a concise and comprehensive presentation of such facts as are known concerning myelosyringosis. It gives evidences of careful personal observation as well as an exhaustive study of the literature of the disease. The bibliography is the most complete that has hitherto been collected, and it alone is sufficient to render the book necessary to the neurologist. Aside from their intrinsic value, monographs of this character are always valuable acquisitions to medical literature because they show the patient and disinterested study by which the science of medicine is advanced.

Practical Pathology for Students and Physicians. By Alfred Scott Warthin, Ph. D., M. D., Instructor in Pathology, University of Michigan. A Manual of Laboratory and Post-mortem Technics, designed especially for the Use of Junior and Senior Students in Pathology at the University of Michigan. Ann Arbor, Michigan: George Wahr, 1897. Pp. 3 to 134.

This volume has been compiled by the author with special reference to the needs of students in pathology at the University of Michigan. It is intended to be used as a laboratory manual, and in this respect is sufficiently complete to warrant its adoption in any pathological laboratory as a book of reference on technical procedures. One half of the volume is devoted to methods of conducting post-mortem examinations, and in this portion is to be found a detailed description of the procedures recommended in the best laboratories in this country and abroad, the author showing himself to be specially familiar with the routine work of the German pathologists.

In the second portion are presented the usual methods of hardening, cutting, and staining tissues. As is usual in these smaller laboratory manuals, the author often digresses into the subject of pathological diagnosis, and, while these additions probably add to the usefulness of the book in the hands of the students to whom it is specially addressed, they render it rather less suitable to the needs of the general reader.

The scope and completeness of the work speak well for the laboratory course in pathology at the University of Michigan.

Surgery of the Rectum and Pelvis. By Charles B. Kelsey, A. M., M. D., Professor of Surgery at the New York Post-graduate Medical School and Hospital, etc. With Two Hundred and Eighty-one Illustrations and Half-tone Plates. New York: Richard Kettles & Co., 1897. Pp. xviii–1 to 573.

The first twenty chapters of this book, with the exception of two, consist of a revision of the author's former work upon *Diseases of the Rectum and Anus.* They are practically an abridgment of that book to fit the first part of the title of the one before us—viz.: *Surgery of the Rectum.* Into this portion of the work very little new material has been introduced. Much of the argument and detailed description of cases in the former work has been left out of this one. The author confines himself largely to the plain statement of facts as he sees them and to concise descriptions of the operations which he has found effectual in diseases of the rectum. He has dropped the bibliography almost entirely and rarely gives a reference to his authority for any statement. Beyond a brief description of high rectal examinations by the use of the Kelly tubes and some recent views regarding colostomy, one finds very little upon the subject of rectal diseases which is not found in the later editions of the author's old book.

In chapters vii and xix, and in chapters xxi to xxvii, the author has launched his boat upon new waters. Here he attempts to justify his opinion that the rectal surgeon should be familiar with and able to perform all operations upon the abdomen and pelvis of both man and woman.

In these chapters he has given terse descriptions of hysterectomy, oophorectomy, salpingectomy, operations on the vagina, fixation of the uterus, operations for the radical cure of hernia, operations on the male genito-urinary organs, the surgery of the ureters, operations for perityphlitis, and intestinal resection.

He has made no attempt to discuss the ætiology, pathology, and diagnosis of the conditions demanding these operations. He has limited himself to a practical description of the accepted and most approved methods in the surgery of the intestines and pelvic organs. In a work of this size, covering so large a field, it is necessary that much should be omitted, and many individual operators will be disappointed not to find their names and methods mentioned. The author has given the gist of the operative surgery of these parts, however, in his usual attractive manner, and his publishers have produced for him one of the handsomest books of the year.

BOOKS, ETC., RECEIVED.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text, by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, member of the Academy of Medicine, etc.; Fournier, Professor of the Faculty of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Léon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1897. Part IX. Pp. 195 to 216. [Price, $3 each part.]

Diseases of the Liver, Gall Bladder, and Biliary System; their Pathology, Diagnosis, and Surgical Treatment. By H. J. Waring, M. S., B. Sc. Lond., F. R. C. S., Demonstrator of Operative Surgery, and Senior Demonstrator of Anatomy, St. Bartholomew's Hospital, etc. New York: The Macmillan Company. Edinburgh and London: Young J. Pentland, 1897. Pp. 11–385. [Price, $3.75.]

The Liver of Dyspeptics and Particularly the Cirrhosis produced by Auto-intoxication of Gastro-intestinal Origin. (Clinical, Anatomo-pathological, Pathogenic, and Experimental Study.) By Dr. Émile Boix, Interne lauréat des hôpitaux de Paris (Médaille d'or, Concours de 1893), etc. Authorized Translation from the Latest French Edition by Paul Richard Brown, M. D., Major and Surgeon, United States Army. New York: G. P. Putnam's Sons, 1897. Pp. iv–133. [Price, $2.]

A New Classification of the Motor Anomalies of the Eye, Based upon Physiological Principles, together with their Symptoms, Diagnosis, and Treatment. The Prize Essay of the Alumni Association of the College of Physicians and Surgeons, New York, for 1896. By Alexander Duane, M. D., Assistant Surgeon, Ophthalmic and Aural Institute, New York. New York: J. H. Vail & Co., 1897. Pp. 100. [Price, $1.25.]

Some Aspects of Infantile Syphilis. Being the Hunterian Lectures delivered at the Royal College of Surgeons in 1896. By J. A. Coutts, M. B. (Cantab.), M. R. C. P., Physician to the East London Hospital for Children, etc. London: Rivington, Percival, & Co., 1897. Pp. 130. [Price, 3*s.* 6*d.*]

Transactions of the New York State Medical Association for the Year 1896. Volume XIII.

Transactions of the Academy of Stomatology, January, 1897.

The Twenty-fifth Annual Report of the Board of Directors of the Zoological Society of Philadelphia.

The Seventy-third Annual Report of the Officers of the Retreat for the Insane at Hartford, Connecticut. April, 1897.

A Report of the Obstetric Department, Brooklyn Hospital, the Low Maternity and Gynæcological Clinic, for the Year 1896.

Annual Report of the Milk Inspector for the Fiscal Year ending April 13, 1896.

The Twenty-fifth Annual Report of the Roosevelt Hospital, from January 1, 1896, to December 31, 1896.

The Twenty-fourth Regular Report of the Medical and Surgical Staff of St. Francis's Hospital, Jersey City, New Jersey, for the Year 1896.

The First Annual Report of the Hospital for the Relief of Crippled and Deformed Children of Baltimore City, January 1, 1897.

University of Minnesota. Agricultural Experiment Station. Bulletin No. 51. Veterinary Division. December, 1896. Bovine Tuberculosis.

On So-called Idiopathic Dilatation of the Large Intestine. By C. F. Martin, B. A., M. D. [Reprinted from the *Montreal Medical Journal.*]

A Peculiar Form of Family "Tic Convulsif," with Nocturnal Exacerbations and Epileptic Attacks. By F. G. Finley, M. D. [Reprinted from the *Montreal Medical Journal.*]

The Biological Basis of Menstruation. By J. C. Webster, M. D. [Reprinted from the *Montreal Medical Journal.*]

The State Board of Health—A Finger on the Public Pulse of Two Millions and a Quarter of People. By Henry B. Baker, M. D. [Reprinted from the *Annual Report of the Michigan State Board of Health.*]

The Ætiology and Pathology of Typhoid Fever. By Henry B. Baker, M. D. [Reprinted from the *Annual Report of the Michigan State Board of Health.*]

Suggestions on the Public Health Work in Michigan. By the Hon. Frank Wells. [Reprinted from the *Annual Report of the Michigan State Board of Health.*]

How to Obtain the Vital Statistics of a State. By Henry B. Baker, M. D. [Reprinted from the *Annual Report of the Michigan State Board of Health.*]

Papillary Cancer of the Body of the Uterus; the Absence of Cardinal Symptoms. By George E. Shoemaker, M. D., of Philadelphia. [Reprinted from the *American Journal of Obstetrics.*]

Cases Illustrating Three Methods of Hysterectomy for Different Indications. By George E. Shoemaker, M. D.

The Relations of Nervous Disorders in Women to Pelvic Disease. By George E. Shoemaker, M. D. [Reprinted from the *University Medical Magazine.*]

Forty-one Consecutive Peritoneal Operations, with One Death; including Twelve Hysterectomies. By George E. Shoemaker, M. D. [Reprinted from the *Medical and Surgical Reporter.*]

Strophanthus; a Clinical Study. By Reynold W. Wilcox, M. D. [Reprinted from the *American Journal of the Medical Sciences.*]

The Doctrine of the Internal Secretory Activity of Glands in Relation to the Pathological Anatomy of Sundry Morbid Conditions. Diabetes, Addison's Disease, Myxœdema, Cretinism, Graves's Disease, and Acromegaly. By J. George Adami, M. D., of Montreal. [Reprinted from the *Montreal Medical Journal.*]

Some Unusual Cases of Appendicitis. By William B. Van Lennep, M. D., of Philadelphia. [Reprinted from the *North American Journal of Homœopathy.*]

Miscellany.

A Simple Procedure for collecting a Large Quantity of the Saliva of Man.—In order to obtain a sufficient quantity of human saliva, says Stricker in the *Münchener medicinische Wochenschrift,* 1897, p. 227 (*Presse médicale,* May 15th), when the question of the sialagogue value of certain medicaments is to be studied, it is well to have the person chew a fine sponge of about the size of a hen's egg, which has been previously well dried.

If the person who undertakes to do this is careful not to press the sponge between the tongue and the roof of the mouth, the sponge will rapidly become saturated with saliva, which is then squeezed into a vase, and the sponge again placed in the mouth. The procedure is not at all fatiguing to the individual, and it enables the experimenter to obtain rapidly a considerable quantity of saliva.

The same sponge may be used several times, provided it is boiled after each experiment and kept in a three-per-cent. solution of hydrochloric acid.

Exceptional Intolerance of Antipyrine.—The *Presse médicale* for May 8th contains the following account of a case which came under M. Vidal's observation (*Gazette hebdomadaire des sciences médicales de Bordeaux,* 1897, p. 54): The patient was a woman, twenty-four years old, who was nervous and subject to violent headaches which obliged her to remain in bed. For several years she had been in the habit of taking from fifteen to thirty grains of antipyrine whenever these attacks occurred, with beneficial results, and the drug had been well tolerated until July, 1893. At this time she had occasion to take fifteen grains of antipyrine which caused the headache to disappear; but from four to five hours later the right wrist and the left forefinger were attacked by an acute itching, and they became red and œdematous; the tumefaction showed itself in the form of patches. Recovery occurred with desiccation or desquamation at the end of five or six days. In the month of September, 1893, fifteen grains were again taken, but the attack was only diminished; it did not disappear completely, and two hours later new patches appeared on the right wrist and the left forefinger; identical patches existed also on the lower lip and on the left cheek. In October, 1893, another attack of headache called for the employment of the drug, and, although but eight grains were taken, the intolerance was still more marked; not only did the patches appear in the same regions, but the upper lip was attacked.

In August, 1895, M. Vidal prescribed for the patient half a dessertspoonful of Fournier's cerebrin, and numerous patches appeared in half an hour after the absorption of this drug. The lips, the eyelids, and the left superciliary region were œdematous; tumefaction was considerable; the patient experienced some difficulty in speaking and swallowing, and she could not open the left eye. The œdema disappeared at the end of three days, but the patches on the wrist and the cheek persisted for ten days. The headache was not at all diminished by the cerebrin. The antipyrine and the cerebrin were no longer employed from that time, although the attacks of headache occurred from time to time afterward. During two of these subsequent attacks the patient noticed the appearance of new patches on the wrist and finger, although no medicine at all had been given. They were not so prominent, and they were of a paler color, and disappeared in two days. Since then there has been no recurrence of the patches.

The Association of Measles and Diphtheria in the Same Subject, and the Usefulness of Cocaine in bringing out the Eruption of Abnormal Measles, and of Pilocarpine in combating Morbillous Pneumonia.—In an article on these subjects, in the *Journal de médecine de Paris* for May 2d, M. Poulet refers to a number of recent cases in which croup or angina of an inflammatory nature was developed at the same time with the measles, and singularly aggravated the prognosis of this eruptive fever. Without doubt, he says, the morbillous eruption counteracted in a notable manner the ordinary evolution of the diphtheria; for sometimes the false membrane was absent or elementary, which did not prevent the presence of Loeffler's bacillus in the mucus of the throat, and, on the other hand, took nothing from the gravity of the infection, for in two cases the patients died. M. Poulet gives a detailed account of these cases in which he used cocaine and pilocarpine with favorable results.

In children, he says, the saturation of the organism with pilocarpine showed itself less by the abundant and continual expectoration of matter than by symptoms of gastric intolerance. When vomiting occurs the cessation of the use of the drug is expressly indicated, and, on this condition, such a symptom does not seem to provoke the least danger. On the contrary, in these cases it seemed to have brought about a favorable crisis, for it was followed by a prompt resolution of the intercurrent phlegmasia.

Concerning the administration of pilocarpine hydrochloride, the dose was generally 0.3 of a grain in twenty-four hours to children from three to five years of age. This quantity was almost a quarter of the dose given by the author to adults.

With regard to cocaine, says M. Poulet, it proved a sovereign remedy in bringing out the eruption in a few hours in three cases of abnormal measles, one of an ataxic form, the two others with double pneumonia and extreme and continual agitation. At the same time also it resolved the visceral congestion. Generally it was administered in a daily amount of 0.3 of a grain to children five years old.

Hereditary Itch in Brittany.—Under this curious title the *Indépendance médicale* for May 5th publishes an abstract of an article from the *Anjou médical* for March, in which the author, M. Atgier, states that the *Acarus scabiei* is a faithful and time-honored inhabitant of many a Breton's cottage. The skin diseases which it gives rise to are the hereditary and constant portion of certain households from which the boys, when they reach the age of conscription, are subject to an examination at the hands of military surgeons. After several days of treatment, if the disease is not of long standing, the acarus is destroyed in the epidermic grooves. The young soldier may then take up the ordinary mode of life in the barracks without exposing his companions to any contagion, and he may remain during the period of his military service free from the itching; but as soon as he returns to his home, the pitiless inhabitant fastens itself upon him again and is thus preserved during its life, to be faithfully transmitted to his heirs or successors. The number of Breton subjects affected with the itch is estimated at about twenty-five per cent. by the author.

Whether, he says, the Breton epidermis is less easily affected by the presence of the *Acarus scabiei* than that of others, owing to a long course of hardening, or whether the insect is not so vicious in Brittany as elsewhere, the fact remains that a great many conscripts present cutaneous affections of long standing, which are without doubt caused by this insect, but which they themselves are unaware of.

The Increase of Insanity and Consumption among the Negro Population of the South since the War.—The following is an abstract of a paper presented by Dr. Thomas J. Mays, of Philadelphia, at the recent meeting of the Section of Neurology and Medical Jurisprudence of the American Medical Association:

Statistics gathered from the superintendents of southern hospitals for the insane show that both insanity and pulmonary consumption have disproportionately increased among the negroes of that section of our country since the close of the civil war. Thus, according to the United States Census, there were in 1860 only 44 insane negroes in the State of Georgia; in 1870, there were 129; in 1880, 411; and in 1890, 910. In North Carolina there were in 1880, 91 colored insane; in 1885, 144; in 1890, 244; in 1895, 307; and in 1896, 370. In Virginia before 1865 there were about 60 insane negroes in the asylums of the State, and now there are over 1,000. In the Eastern Hospital for the Colored Insane in North Carolina, consumption caused fourteen per cent. of the total number of deaths in 1884, while in 1895 it produced twenty-seven per cent. of all the deaths, and this in spite of a reduced general mortality rate. In the Mississippi Lunatic Asylum, from 1892 to 1896, consumption caused forty-two per cent. of the total number of deaths among the negroes, or an increase of twenty-two per cent. over the death-rate from this disease among the white population outside of hospitals for the insane, it being of course well known that insanity predisposes to phthisis, if the latter is estimated at twenty per cent. In the Alabama Insane Hospital during three years and nine months beginning October 1, 1890, there occurred 295 deaths among 1,700 white and negro patients. Of the 179 deaths among the white patients, twenty-eight per cent. were due to tuberculosis, and of the 116 deaths among the negroes, 42 per cent. were due to the same disease.

From this and other evidence which is presented, it is concluded that both these diseases have disproportionately increased since the war, and that in all probability the causes which led to the one also led to the other disease. The writer holds that the cause of phthisis resides in a disintegrated nervous system, and cites a number of concurrent authorities, as well as clinical and pathological data, to prove his position; and, among other conclusions, he draws the following: that both consumption and insanity are closely allied, both in personal and family history, to idiocy, hysteria, epilepsy, asthma, and other diseases of the brain and spinal cord; that they are both produced by syphilis, alcohol, overwork, business vicissitudes, domestic trouble, mental anxiety, grief, disappointment, and excesses of all sorts—in fact, by any agent or influence which vitiates the brain or nervous system; and that those who are confronted by a new and higher civilization, and who are compelled to adjust themselves to these new relations, are excessively apt to fall victims to insanity and pulmonary phthisis.

The condition of the negro is viewed from these premises. Civilization is regarded as an accumulation of force, and the older the civilization the greater its momentum and the higher its plane; and when a lower civilization is precipitated in the midst of a higher, as in the case of the negro, it is the throwing together of two forces which differ in power and in rate of motion. The lower, in order to preserve itself, must make an effort to adjust itself to the course and changes of the higher movement, and the strain which is occasioned by this effort of adaptation falls on and vitiates the brain and nervous system, and this in turn gives rise to insanity and phthisis. Alcoholism and syphilis, which are readily acquired by these people, accelerate the advent of these diseases by destroying the integrity of the brain and nervous system.

Viewing the condition of the southern negro from these standpoints, it is perfectly obvious why insanity should necessarily develop, and on no other grounds can we explain why consumption should follow in the wake of insanity. Those who were able to realize all the factors which would be called into activity by the environmental change of the negro after the war could, at the time it was made, have foretold the inevitable results which are now but too plain to every one. It is in part a repetition of what happened, and is now happening, to the aborigines of North America, Australia, and New Zealand, who in their unequal warfare with modern civilization have been and are being fast decimated and exterminated by pulmonary phthisis.

Report to the Medical Society of the County of New York of its Committee on the Abuse of Medical Charity, Transmitted May 24, 1897.—This report, which reached us too late for insertion in our last issue, is as follows: In accordance with a resolution acted upon at a meeting of this society held in October last, a committee of eleven members was appointed to devise means for the control or correction of the abuses of medical charity now existing in this city. This committee was made up as follows: J. H. Burtenshaw (chairman), A. B. Ball, Hermann J. Boldt, E. S. Bullock, Henry D. Chapin, Carter S. Cole, Alexander Hadden, William M. Polk, W. Washburn, W. H. Weston, and F. H. Wiggin.

At the first meeting of this committee two steps were decided upon: 1. To ascertain the sentiment of the governing boards of the different dispensaries regarding the proposed effort to check indiscriminate dispensing of medical aid. 2. To communicate with the Charity Organization Society of the city of New York with the object of ascertaining if a system might be devised whereby the worthiness of applicants for dispensary treatment might be investigated and reported upon, and if its cooperation might be relied upon to this end.

As a result of the last-named resolution the fact was made known that the Charity Organization Society would willingly cooperate with this society along the lines proposed, and that it would place its general offices and staff of assistants at the service of the society free of cost, provided the extra expense attendant upon the proposed investigations was met by contributions from other sources.

In order to determine to what extent the cooperation of the dispensaries might be relied upon, a copy of the following letter was sent to the president, secretary, or physician-in-charge of each of the ninety-five dispensaries located in this city.

(Copy.)

NEW YORK, *February 13, 1897.*

DEAR SIR: The committee recently appointed by the Medical Society of the County of New York to devise means to correct the abuses of medical charity now existing in this city respectfully asks for answers from you, in your official capacity as an officer of one of the free medical dispensaries, to the subjoined questions.

1. Does the governing board of the dispensary approve of the movement to abolish or regulate the abuse of medical charity?

2. Will the governing board cooperate with the committee of the Medical Society of the County of New York and endeavor to dispense free medical treatment only to those applicants that are deserving and unable to pay a physician for such services?

3. Will the governing board agree, at such time as called upon, to display in conspicuous places in the dispensary a placard reading somewhat as follows: "On and after (date) the case of every patient applying for free medical treatment at this dispensary will be investigated, to determine if the applicant is deserving of free medical service," providing such agreement is not to be construed as binding the dispensary to make such investigations on its own account?

(Signed.)
On behalf of ...... Dispensary.

Replies to this letter have been received from seventy-six dispensaries. Of the nineteen dispensaries ignoring the first circular letter, and a duplicate sent out on the 1st of April, five are homœopathic, two are under the supervision of the department of charities, and the remaining five are either private or church institutions at which but a small number of patients living in the immediate vicinity are treated. These replies were affirmative, or conditionally affirmative, to all three questions, with the exception of those received from the Dispensary of St. Mary's Free Hospital for Children, located at 435 and 437 Ninth Avenue, and the Out-patient Department of the New York Hospital, 12 West Fifteenth Street.

The Dispensary of St. Mary's Free Hospital for Children treated 7,101 patients during the year 1896, and during the same time the Out-patient Department of the New York Hospital treated 9,803 new patients, who made 45,838 visits to the dispensary, a majority, it is understood, being required to pay one dollar a month for the treatment received, regardless of financial condition.

At a succeeding meeting of your committee it was made known that a committee having in view the same object as its own had been appointed by the County Medical Association, and that an organization known as the New York Medical Society for the Advancement of the Practice of Medicine had been formed, and on March 22d had caused to be introduced into the legislature of the State a bill embodying certain reforms in the management of dispensaries in this city. It was the opinion of your committee that certain features of this bill were of too radical a nature to allow of its becoming a law at the present time; that any enactment designed for the control of dispensaries should apply to the entire State rather than to the city of New York alone; that, in the former case, the supervision and control of dispensaries should be placed in the hands of the State Board of Charities; and, finally, that, as far as practicable, the efforts of the different committees formed for the same purpose should be directed along the same lines. Your committee feels that great credit is due the members of the New York Society for the Advancement of the Practice of Medicine and the members of the committee of the County Medical Association for their efforts toward the control of the charity abuse, with thanks for their hearty co-operation with your committee toward this end.

The bill introduced in the legislature by the first-named organization was ultimately amended so that its provisions read as follows:

SECTION 1. By this act a dispensary is defined to be any institution, agency or place, society or association whose actual or alleged purpose it is to furnish gratuitously or at a nominal price to indigent, needy, or other persons not resident therein medical or surgical relief, advice or treatment, medicine or orthopædic or other appliances.

SEC. 2. On or after the first day of October, 1897, it shall not be lawful for any one to establish, conduct, or manage at any place in this State a dispensary not duly incorporated as such under the laws of this State, or not connected with another corporation and licensed by the State Board of Charities.

SEC. 3. In no case shall a dispensary be established, carried on, or conducted in any place in this State commonly known as a drug store or in any place or building in the State defined by law or by an ordinance of a board of health as a tenement house.

SEC. 4. It shall not be lawful for any person or persons to display the word "dispensary" or to cause the same to be published in any form or in any manner in order to attract any indigent, needy, or other person to any dispensary not duly incorporated or licensed as provided in Section 2 of this act.

SEC. 5. Any person who shall by means of any willful false representations on his or her part obtain at any dispensary medical or surgical relief, advice or treatment, medicines or orthopædic or other appliances, or any person who shall willfully violate any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction shall be required to pay a fine of not less than fifty nor more than two hundred and fifty dollars.

SEC. 6. The State Board of Charities is hereby empowered to make rules and regulations and to alter and amend the same when in its opinion necessary, in accordance with which indigent, needy, or other persons shall be given medical or surgical relief, advice or treatment, medicines and orthopædic or other like appliances by such duly incorporated or licensed dispensaries, and the said board is empowered, a chance for a hearing having been given, to annul the incorporation, or suspend the operations, or revoke the license of any dispensary for willful neglect or failure on the part of its managers, trustees, officers, or employees to comply with the rules and regulations so established by said board; but nothing in this act contained shall be considered to mean that said board shall have power to determine the particular school of medicine under which the dispensary shall be conducted.

Sec. 7. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

Sec. 8. This act shall take effect on the first day of October, 1897.

This bill was passed without a dissenting vote by both senate and assembly on the 14th day of April last, but up to the present time has not received the signature of the governor. This fact is peculiarly unfortunate as, according to the law of the State, all bills that do not receive the approval of the governor within thirty days of the adjournment of the legislature lapse and become void, and in the present instance this time limit expires at twelve o'clock to-night. This failure on the part of the governor to approve the bill can perhaps be attributed only to pressure of official business, as at the date of adjournment of the legislature, on April 24th, there were more than seven hundred enactments awaiting his signature.

The president of this society, your committee, the president of the County Medical Association and the members of its committee, and the members of the Society for the Advancement of the Practice of Medicine have thoroughly appreciated the importance of this bill and the necessity of its becoming a law, and every influence at their command has been brought to bear toward this end. As no opposition was made to the passage of the bill in either branch of the legislature, and as the profession, not only in this city but throughout the State, is practically unanimous in commending its main features, the sense of disappointment is the more keen at the failure of the governor to stamp the measure with the seal of his approval.

In anticipation of the bill being signed, the State Board of Charities, at a meeting held on the 14th of April last, appointed a committee of three of its members to hold public meetings immediately after the bill became a law, for the purpose of receiving suggestions regarding the promulgation of rules for the management of dispensaries, and it was the intention of your committee to ask for authority from this society to represent it before that body. In view of the failure of the dispensaries bill to become a law, your committee is in a position only to recommend that the committee on the abuse of medical charity be continued indefinitely, and that it be empowered to take such steps as may appear to it advisable toward obtaining future legislation in the direction of correcting or controlling the medical charity abuse.

. . . .

In conclusion, your committee expresses the conviction that there is no species of charity so beneficent, so far-reaching, or so generously bestowed as true medical charity, and that nothing could be further removed from its wish than that it should be curtailed or kept from the reach of the deserving poor; but it has been so conclusively demonstrated that there exists such gross and unpardonable abuse of that charity on the part of those who are not entitled to it that it has become imperative to adopt radical measures for the suppression of that abuse and at once. Respectfully submitted,

[Signed.] James Hawley Burtenshaw,
Chairman.

Earl Sprague Bullock,	W. M. Polk,
H. J. Boldt,	Alexander Hadden,
Henry D. Chapin,	Carter S. Cole,
F. H. Wiggin,	W. Washburn,
A. B. Ball,	W. H. Weston.

The Schott Treatment of Chronic Heart Disease.—In the May number of the *Johns Hopkins Hospital Bulletin* there is a very interesting article in which Dr. C. N. B. Camac gives an account of his visit to Bad Nauheim, the home of the treatment and of the surviving Dr. Schott, one of its originators.

Nauheim, he says, is in the Grand Duchy of Hesse, three quarters of an hour from Frankfort on the Main and two hours from Homburg. Nearly in the centre of the northeastern half of what geologists have called the Mayence Basin (Mainzerbecken) Frankfort is located, and at the eastern slope of the Johannesburg, the last spur of the Taunus mountains, is situated Bad Nauheim. As one approaches Nauheim, says Dr. Camac, he is struck by the great trestlework structures in the midst of the fields. On examining these more closely they are found to be frame structures about from two hundred to three hundred feet long and about fifty feet high, supporting switches closely stacked one upon another. The salt waters are raised to the top of these trestles and allowed to filter through the interlacing switches, upon which, by the evaporation of the water, the salt is deposited. These switches are removed every few months or so, and the salt is broken from the branches, ground and refined, and serves as the commercial salt of the surrounding country.

The author states that he had the opportunity of seeing the baths through the courtesy of Dr. Hirsch, Dr. Schott's assistant, who showed him over the grounds and described very fully the details of the treatment. It can best be described, he says, in Dr. Schott's own words: "The springs of Nauheim may be divided into two classes, those suitable for bathing and those suitable for drinking. Together with other ingredients, the bath waters contain from two to three per cent. of sodium chloride, from two to three per mille of calcium chloride, various salts of iron, and above all, very large amounts of carbonic acid."

Regarding the action of these baths and exercises, continues the author, it has been known that they were very efficacious in the relief of chronic heart disease for some years, but their action had never been investigated. The explanation given by Dr. Schott is as follows: "Physiological research of recent years seems to show that the salts held in solution in water externally applied have no direct action on the system; the light and mobile molecules of the gas, on the other hand, pass rapidly through the skin to the corium with its rich supply of blood. We must look upon the salts held in solution as passing by imbibition through the outermost layer of the epidermis, and so acting on the terminal nerves of the skin as to exert a reflex action on the internal organs.

The warm baths act in their own peculiar manner on the organism as a whole; increased tissue change seems to be induced by an increase of the oxygen-absorbing power of the cells, and hence follows the sense of the need of rest and sleep as an immediate consequence of the bath, as well as influences speedily brought to bear on the nervous system as a whole. Excessive bathing induces an excitable state of the nervous system, sleeplessness, loss of appetite, and consequent loss of strength. The principal changes which ensue in the system and in the function of the special organs are that the heart beats more slowly and strongly, the pulse becomes full and increases in force, and the blood pressure may rise to the extent of from twenty to thirty millimetres of mercury; the breathing becomes regular and quiet, and the capacity of the lungs is increased.

"While the patient is in the bath he becomes flushed and a feeling of comfort and warmth ensues which may even rise to one of an agreeable intoxicating character. Almost invariably the excretion of urine is increased; exudates in the body cavities, especially from the peritonæum, pericardium, and pleura, are absorbed. This latter action and that on the valves of the heart can be explained only on the theory of reflex action produced by influences acting upon the terminal nerves."

Another explanation, says Dr. Camac, is that given by Dr. Bezly Thorne, that there is a dilatation of the muscular arteries and afterward those of the skin, and thus there is a relief of the heart from backward pressure.

Concerning the methods of administering the baths which are of the greatest importance, Dr. Camac quotes Dr. Schott: "It is advisable to begin with a one-per-cent. salt bath containing one one-thousandth of chloride of calcium, freed from gas and at temperatures varying from 92° to 95° F., the bath lasting from six to eight minutes. The course of treatment should be interrupted by frequent intervals of one day. The temperature of the bath should, if possible, be gradually lowered, while the proportion of solids in solution and the duration of the bath are gradually increased. At a later stage it is permissible to proceed to the baths containing carbonic acid. The temperature may then be rapidly lowered, especially if chloride of calcium be added in order to increase the mineral strength of the bath."

The course consists of six baths: the first and the second being simply with salts, calcium chloride, and the sodium chloride; the third, fourth, fifth, and sixth contain carbonic acid as well as these salts.

The preparation of the baths artificially, the author goes on to say, was taken up especially by W. Bezly Thorne, in London, in 1895, since which time Ewart, Bowles, and Broadbent have employed them in London, Moeller in Brussels, and Heineman in New York. Following the analysis of the Nauheim waters made by the chemist Fresenius, of Wiesbaden, the artificial baths may be readily prepared. He states that packages are now made up at the hospital pharmacy, each containing the proportion of salts for the different strengths of the baths, each package corresponding to forty gallons of water, which is just about enough to entirely immerse the body. The baths of different strengths are given in appropriate cases.

Dr. Camac makes no attempt to speak for or against the treatment, and no cases are reported. He simply presents an outline of his visit to Bad Nauheim, which was made for the purpose of observing the effects of the treatment and of learning something about it with the object of trying it in the hospital, in which there are now five patients under the treatment.

The exercises, he says, are called by Dr. Schott "Widerstandgymnastik," or resistance gymnastics, and consist in slow movements executed by the patient and resisted by the physician or operator. A short interval is allowed after each movement, during which the patient sits down. The exertion employed must be very small, and should cause no increase in respiratory movements, flushing, or pallor. The patient should be loosely and lightly clothed, and instructed to breathe quietly. The resistance made should be of such a kind that the patient may always feel himself easily the master. The operator must not grasp or in any way constrict the limb, but should oppose by the hand held flatly. The movements are nineteen in number, and a detailed description of each is given by Dr. Camac; rules also are given for the administration of the bath, which were made according to instructions obtained from Dr. Schott himself.

The Value of an Exclusive Red Meat Diet in Certain Cases of Gout.—At a recent meeting of the Medical Society of London, a report of which is published in the *Lancet* for May 15th, a discussion of this subject was resumed by Dr. Archibald Garrod, who said that he had met with many cases of chronic rheumatic arthritis which had been treated in this way, in some instances with advantage, in most without result. It was really carrying to an extreme degree the plan of feeding up these patients, who were often harmed by a too restricted diet. Probably no single explanation would be adequate to account for the improvement in all the cases. Very few of the successful methods of treatment, such as the relief afforded by colchicum during the acute paroxysms, had yet been explained on scientific grounds. It was obvious that there was a fundamental difference between the cases in which there was acute gouty arthritis with a deposit of urate of sodium around and in the joint, and cases of chronic articular gout in which there was an alteration of the nutrition of the joint leading to extensive changes in its whole structure. In the case of uric-acid calculi there was another process, the decomposition of the quadri-urate, the occurrence of which depended on many variable conditions, such as the amount of saline constituents in the urine, or even the amount of pigment. The line of treatment which he said had been recommended by Mr. Armstrong, the author of the paper, was calculated to increase the amount of uric acid produced and was therefore unsuitable in cases in which there was any evidence of kidney disorder, which he thought was the rule, at any rate to a slight extent, in cases of gout. The improvement in many cases was probably due to the fact that many of the digestive organs obtained an almost complete rest, and the sudden change appeared often to be beneficial. In true gout he thought that the applicability of this mode of treatment was limited, and that it was by no means free from risk.

Dr. A. P. Luff had shown that there was no difference between the metabolism of animal proteids and that of vegetable proteids. He thought their different effects as articles of diet depended on the accompanying saline constituents. The mistaken idea, he said, that a meat diet caused the introduction of increased quantities of uric acid into the blood was responsible for the objection to meat as an article of diet for the gouty that many held. He believed that in healthy people uric acid was formed in the kidney only from urea and glycocin which came from the liver. In morbid states of the kidney, structural or functional, the uric acid was absorbed from the kidney, and it might be derived from the breaking down of nuclein in leucocythæmia. A person on animal diet excreted more urea, but not more uric acid, than when he was taking purely vegetable diet. At the previous discussion Dr. Haig, he said, had abandoned his former contention that meat diet introduced uric acid into the blood, but said that xanthin, which he considered as physiologically equivalent, was so introduced. He appeared to rely on Haycraft's process for detecting this, but in 1891 Dr. Haig himself had shown that Haycraft's method was unsuitable for detecting xanthin, and there was no proof that xanthin if introduced would contribute to the production of gout. Dr. Luff agreed with Dr. Garrod that there was almost always some renal disability in cases of gout, and that this plan of treatment could only be safely carried out in a few carefully selected cases.

Dr. J. P. Freyer thought we could not accuse a meat diet of being the cause of the deposit of uric acid in the face of the fact that the people most subject to manifestations of gout were the vegetarian inhabitants of northwest India.

Dr. R. Maguire said that the question was not one of chemistry, of diet, or of microbes, but of vitality. In the carnivorous serpent uric acid was passed practically in the form of a calculus; the graminivorous bird passed it in the form of urates, and the most highly evolved man in health passed it in solution in the urine. But when his vitality was lowered there was a process of devolution, and uric acid was deposited. The Hindu was a man of very low vitality, and deposition of uric acid readily occurred even on a purely vegetable diet.

Mr. Armstrong took exception to Dr. Haig's view that the meat acted only as a stimulant, or that its action was the same as that of the Carlsbad waters. Mr. Armstrong believed the effect of these to be due to increased elimination of uric acid by the kidneys and the skin. The influence of the nervous system in deranging the normal chemical processes in the body was a very potent one, and he had seen worry repeatedly produce a deposition of uric acid in a woman who never touched meat. He thought that much of the benefit was due to the sudden cleavage in the habits of diet. He stated that several of his patients had previously suffered much from amylaceous dyspepsia. He insisted that this mode of treatment was not a panacea. The cases had to be carefully selected, and only about three per cent. proved to be suitable.

Voluntary Dilatation of the Pupil.—M. Bechtereff, in the *Neurol. Vestnik.*, t. III, f. i, relates the following case (*Gazette hebdomadaire de médecine et de chirurgie*, May 9th): The patient complained of a general weakness and of palpitations which were particularly alarming when she went to bed. The author made an examination and ascertained that the patient had the faculty of voluntarily dilating the right pupil, a faculty which she had possessed for about five years. In the beginning she could not induce this artificial dilatation except by bending forward very much or by looking at some object very fixedly. Later she could bring about the same result simply by an effort of the will which caused a sensation of tension in the eye. In order to bring the pupil back to its normal condition, it was sufficient to close the eyelids several times. No mental production of darkness or of light played any part in this case, and in regard to this M. Bechtereff made an examination of the physiology of the innervation of the iris. The dilatation of the pupil, which was dependent upon a central excitation, could be produced in two ways: either by the direct action on the dilator muscles of the pupil, or by an inhibitory action on the constrictor centre of the pupil, and, owing to this action, the dilator muscle of the pupil became contracted more freely.

In this case the accommodation of the two eyes was equal, and the dilatation of the right eye when looking at a distance was insignificant in relation to its voluntary dilatation. These facts, added to the unilateral production of the phenomena, proved that, in order to produce it, the patient did not resort to voluntary accommodation of the eye without fixation of an exterior object. It was impossible to explain the origin of the phenomenon, M. Bechtereff said, by the inhibition of the constrictor centre of the pupil, in view of the absence of all muscular contraction, and also because the symptom was unilateral. The hypothesis of a pupillary dilatation under the influence of a mental production of pain or of fear should also be excluded, provided that at the moment of production of this phenomenon the patient was perfectly calm. M. Bechtereff supposes it is a voluntary action bearing directly upon the sympathetic fibres upon which this pupillary dilatation is dependent. Two facts seem to argue in favor of this hypothesis: 1. At the same moment when the pupil became dilated the patient felt a sensation of a certain protrusion of the eye. 2. When the pupil became dilated it remained in this condition for some time, and the dilatation did not disappear until after the repeated closing of the eyelids.

On the whole, the author thinks that the cause of this singular phenomenon is the existence of a pre-established relation between the upper psychical centre (centre of voluntary impulse) and the centre which innervates the dilator muscle of the pupil.

Local Applications of Methyl Salicylate in the Treatment of Rheumatism.—The *Journal des praticiens* for May 14th contains a report of the proceedings of a recent meeting of the Société médicale des hôpitaux, at which M. Lemoine gave an account of nine cases of rheumatism in which the patients had been treated with paintings of methyl salicylate.

The application of this drug, he said, on the cutaneous surface acted in acute articular rheumatism in the same way as sodium salicylate did when it was taken internally. Although it seemed to produce a more rapid diminution of the pain, its employment in doses of from a hundred and fifty to a hundred and eighty grains was not followed by vertigo, dizziness, ringing in the ears, or nausea, as was often observed after the internal administration of sodium salicylate. On one occasion, however, the application of three hundred grains had provoked headache.

Methyl salicylate was eliminated in the urine in the form of salicylic acid absolutely in the same proportion as the sodium salicylate was when it was given internally. The quantity eliminated was fully equal to a tenth of the quantity absorbed.

This drug was employed in the form of oil of wintergreen, which contained ninety per cent. of the salt, and the mode of employment was as follows: The quantity to be used was to be poured on a smooth tarlatan compress which was to be applied to as large a surface as possible. In order to obtain a complete result it was neessary to cover this compress with a piece of impermeable linen which entirely covered the limb, and to close this hermetically with a band. The application should be made preferably on the painful spot, but if a completely closed dressing could not be applied to the region, the application must then be made on the anterior surface of the forearm, or, better still, on the middle portion of the thigh.

The good results obtained from this treatment, said M. Lemoine, seemed to come rather from the rapid absorption of the drug by the general circulation than from its contact with the painful region.

The applications of methyl salicylate might be replaced by the internal administration of sodium salicylate. It had the same certainty of action, however, and the applications seemed to be expressly indicated whenever the stomach required careful treatment.

Pyramidone.—At a recent meeting of the Société de thérapeutique, a report of which is published in the *Indépendance médicale* for May 12th, M. Huchard called attention to this new drug, which was a substitute for antipyrine. M. Deguy, he said, had experimented with it and had found it very toxic, and recommended that it should be handled with prudence. M. Huchard prescribed it in maximum doses of fifteen grains a day. It was an antipyretic that exercised little action on the arterial tension, which was contrary to what had been affirmed by German experimenters.

The Third District Branch of the New York State Medical Association.—The thirteenth annual meeting will be held in Norwich on Tuesday, June 8th, under the presidency of Dr. Robert Aberdein, of Syracuse. The programme includes the following papers: A Report of Some Cases of Cancer of the Uterus, by Dr. Robert Aberdein; Medical Expert Testimony, by Dr. H. O. Jewett, of Cortlandt; Puerperal Fever, by Dr. W. B. Morrow, of Walton; A Few Remarkable Cases, by Dr. H. D. Didama, of Syracuse; Antitoxines, by Dr. R. A. Thompson, of Norwich; The Therapeutics of Pulmonary Tuberculosis, by Dr. C. W. Ingraham, of Binghamton; A Unique Experience in Diphtheria, by Dr. E. D. Ferguson, of Troy; A Concise Report of Twenty-six Consecutive Abdominal Operations since August 4, 1896, by Dr. W. A. Moore, of Binghamton; Troubles arising from Phimosis, with a Report of Cases, by Dr. F. D. Reese, of Cortlandt; Colles's Fracture, by Dr. D. M. Totman, of Syracuse; The Treatment of Disease; Empirical or Rational, by Dr. Chauncey P. Biggs, of Ithaca; X Rays in Surgery, by Dr. F. W. Ross, of Elmira; Free Baths and Public Schools, by Dr. J. G. Orton, of Binghamton; The Pathology of Cancer, by Dr. F. W. Higgins, of Cortlandt; The Surgery of Cancer, by Dr. L. J. Brooks, of Norwich; and Cancer of the Uterus, by Dr. W. E. Ford, of Utica. Dr. Ely Van de Warker will also read a paper the title of which is to be announced.

The Massachusetts Medical Society.—The one hundred and sixteenth annual meeting will be held in Boston on Tuesday and Wednesday, June 8th and 9th, under the presidency of Dr. Henry P. Walcott, of Cambridge. The section meetings will be held in the Mechanic Building on Tuesday. The programme for the Section in Medicine, under the chairmanship of Dr. C. E. Stedman, of Dorchester, includes the following papers: General Remarks on Dyspepsia, by Dr. E. G. Cutler, of Boston; Food Nostrums, by Dr. Charles Harrington, of Boston; The Treatment of Constipation, by Dr. Franz Pfaff, of Boston; and Enteroptosis, by Dr. Mary P. Cole, of Greenfield. The special order for the Section in Surgery, under the chairmanship of Dr. G. W. Gay, of Boston, is as follows: On the Occurrence of Retinal Hæmorrhage after Middle Age, and its Bearing on the Duration of Life, by Dr. Hasket Derby, of Boston; The Anomalies of Muscular Balance, by Dr. O. F. Wadsworth, of Boston; Some Phases of Lacrymal Trouble, and their Treatment, by Dr. David Harrower, of Worcester; Contagious Conjunctivitis, by Dr. Myles Standish, of Boston; Convergent Squint, by Dr. C. H. Williams, of Boston; Purulent Ophthalmia from the Bacteriological Standpoint, by Dr. W. J. Daly, of Boston; Brain Complications of Diseases of the Ear, by Dr. J. O. Green, of Boston; The Fatigue of Deafness, by Dr. C. J. Blake, of Boston; Nasal Obstruction with Reference to Aural Diseases, by Dr. G. A. Leland, of Boston; Some of the More Common Affections of the Ear, and their Treatment, by Dr. H. L. Morse, of Boston; Some of the Indications for Opening the Membrana Tympani, by Dr. F. L. Jack, of Boston; and The Ear Complications of Typhoid Fever, by Dr. E. M. Holmes, of Boston. The Shattuck lecture will be given on Tuesday by Dr. D. W. Cheever, of Boston, on the subject of the New Surgery. The general meeting will be held in Mechanic Building on Wednesday, at which the following papers will be read: The Diagnostic Value of the Examination of the Blood Serum, by Dr. R. C. Cabot, of Boston; Fistula in Ano; its Palliative and Operative Treatment, by Dr. J. B. Blake, of Boston; Some of the Uses of the Röntgen Rays in Medicine, by Dr. F. H. Williams, of Boston; and Medical Inspection of Schools, by Dr. S. H. Durgin, of Boston. The annual discourse will be delivered at noon by Dr. Z. B. Adams, of Framingham.

Acute Poisoning due to Absinthe.—At a recent meeting of the Lyons Société nationale de médecine, a report of which is published in the *Gazette hebdomadaire de médecine et de chirurgie* for May 13th, M. Pauly and M. Bonne reported the case of a man who drank a pint and a half of absinthe for the purpose of putting an end to his life. Three hours afterward he was taken to the Hôtel-Dieu. During the interval he had not received aid of any kind. When he was admitted into the hospital he was apparently dead; all the reflexes were abolished. At once lavage of the stomach was practised, and after a tube was introduced pure absinthe was withdrawn. At the same time various kinds of excitants were employed, such as injections of ether, of quinine sulphate, and of nearly a quart of artificial serum, with cauterization of the thorax, etc. Respiration was re-established as well as the beating of the heart, which was very feeble but regular. There was complete anuria and all the reflexes remained abolished. About fifteen hours after his admission death occurred suddenly.

At the autopsy there was very little congestion of the right lung observed, and none of the brain, but the meninges were very much congested. There was some hæmorrhage on the larger curvature of the stomach. The liver contained 0.21 of one per cent. of alcohol, the blood 0.33 of one per cent., and the brain 0.44 of one per cent. The epithelium of the stomach and that of the kidneys were desquamated. The mucous membrane of the stomach and the renal blood-vessels were very much congested.

In this case no epileptoid attacks, which are supposed to be characteristic of absinthe poisoning, were observed.

Original Communications.

THE VALUE OF THE RÖNTGEN RAYS IN CARDIAC DIAGNOSIS.

By ALBERT ABRAMS, A. M., M. D.,
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The estimation of the area of cardiac dullness, whether determined by light, strong, or palpatory percussion of the heart's resistance by the method of Ebstein, is an indefinite procedure too frequently influenced by the prejudiced wish of the observer. It is usually the skilled diagnostician who seeks to eliminate by other physical signs the errors of cardiac percussion. The estimation of the size and shape of the heart by the Röntgen rays affords a trustworthy guide by direct vision. This method is especially applicable in adults and children with thoraces scantily furnished with musculature and panniculus, although obese individuals are not always exempt from this method of examination. Before appreciating departures from the normal it is absolutely necessary for the observer to acquaint himself with the appearances of the heart in the normal condition. It is also necessary to employ the requisite apparatus. Without the latter, skill and experience count for naught. In my work I employ an eight-plate static machine, made by Van Houten & Ten Broeck, of New York city. The latter have thoroughly mastered and brought to a high state of perfection the practical details of the construction of their static machines. I also employ a Newton fluorescent screen, which yields exceptionally good results. If an individual is so placed before a vacuum tube that the rays pass through the chest, the heart may be seen by the aid of the screen as a definite shadow, surrounded by a light area, occupied by the lungs. The movements of the heart can also be detected, particularly so when the patient is instructed to take a deep inspiration. The latter manœuvre also aids in defining more clearly the boundaries of the heart. The Röntgen-ray illumination demonstrates that the apex approaches the base of the heart during systole, so that there is no apex impulse, in the sense of Skoda, but merely a lateral systolic apical stroke. It is also shown by direct vision that the ventricles do not completely empty themselves at each systole. When the patient takes a deep inspiration the diaphragm descends, and the lower margin of the heart can be separated from the liver, as manifested by a bright line between the two organs. The latter phenomenon is of exceptional value in diagnosis, for by the conventional methods of percussion the separation of the lower margin of the heart from the liver is impossible. With a little practice an outline of the heart can be traced on the chest wall. A dermograph in a metallic casing should be employed for tracing purposes. It is difficult, without considerable practice, to accurately define the position of the dermograph through the screen, and each observer will be compelled to improvise some specially constructed marker for tracing purposes. Another simpler, though less practical, method is to attach a sheet of white paper to the back of the fluorescent screen. The screen is next placed in position to obtain a clear outline of the heart, and this outline is traced on paper with a suitable pencil. The method which I usually employ to the best advantage is to trace directly on the glass covering my screen the outline of the heart with a pencil for writing on glass. This necessitates working in a dark room. The figure on the glass is then transferred to tracing paper, and the latter properly filed for future reference. The best position of the patient in relation to the focus tube for cardiographic purposes can only be determined by experience. Fig. 1 illustrates an average tracing of the heart on the anterior surface of the chest wall.

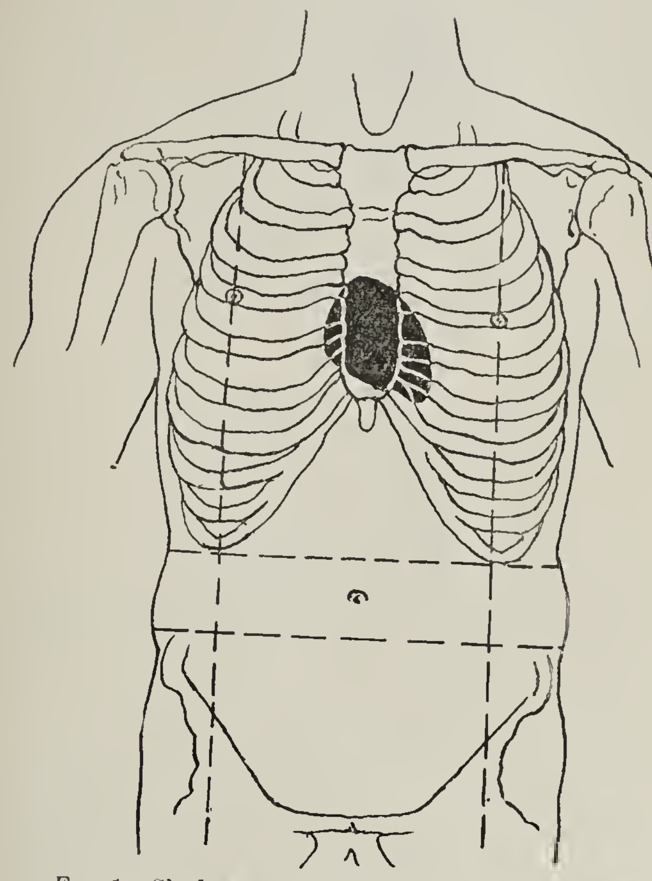

Fig. 1.—Shadow of the heart on the anterior chest wall.

It will be noted in Fig. 1 that the entire outline of the heart can be determined with a front view. From the posterior surface of the chest wall only a portion of the organ is seen, owing to a part of the heart being obscured by its position in front of the vertebral column and the oblique situs of the organ in the thorax. Fig. 2 shows an average tracing of the back view of the heart.

The shadow to the left of the vertebral column corresponds to the left ventricle, and the shadow to the right of the column corresponds to the right auricle. Radiography applied to the chest enables one to diagnosticate aneurysm of the aorta, cardiac aneurysm, and dilatation of the heart. As an instance of the value of the Röntgen rays in diagnosis the following case may be cited: An individual was referred to me for diagnosis. Several physicians had examined him, and they had all concurred in the opinion that there was a pericardial effusion. The physical signs were undoubtedly those of fluid effused into the pericardium, but there was some evidence suggesting cardiac dilatation as a possible condition. The diagnostic verdict was in favor of the latter, as determined by the Röntgen rays. It was possible, in this case, by means of the fluorescent screen to accurately define the borders of the heart and to note that the apical stroke corresponded exactly with the extreme left border of the shadow outline of the heart. The apical movements were more clearly defined on the posterior surface of the chest wall. It is apparent that if an effusion were present, and the movements of the apex could be discerned, they would be within the shadow of the heart and not confined to the extreme left border of that organ. In carrying out the Schott treatment, the Röntgen rays, in controlling the progress of my cases, have furnished me definite and invaluable assistance. After faithfully mapping out the outlines of the heart, tracings can be taken directly from the chest and preserved for future reference. The examination of the heart by direct vision enables us further to determine with certainty the influence of posture and respiration on the position of the heart, the presence or absence of pleuro-pericardial synechiæ, and the extent of the apical stroke, which is invaluable in the diagnosis of hypertrophy or dilatation of the left ventricle. Never before did I appreciate so keenly the influence of the stomach on the heart's action as I did a few days ago in the case of a student who was examined with the Röntgen rays. In his case there was a congenital absence of the spleen, and the outline of the stomach was clearly discernible. The phenomena furnished by insufflation of the stomach explained many conditions which were to me heretofore inexplicable.

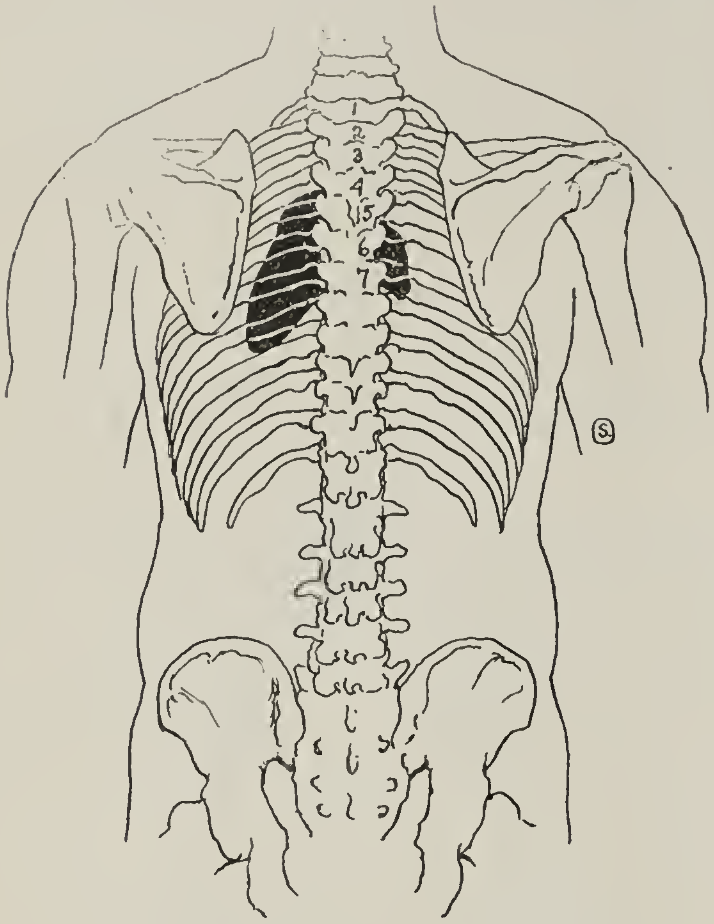

Fig. 2.—Shadow of the heart on the posterior chest wall.

784 Geary Street.

DEFORMITIES OF THE NASAL SÆPTUM.

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A study of catarrh of the upper air tract is to-day a study of the nasal sæptum, as a deformity of this anatomy sooner or later involves other parts, and eventually leads to catarrh of the mucous membrane of the upper air tract.

Mackenzie describes the sæptum of the nose "as formed behind by the vomer and the perpendicular plate of the ethmoid, in front by a vertical cartilaginous plate received into the angle of juncture between the bones.

"The inner edge of the palatal process of the superior maxillary bone and of the palate bone itself rises on the upper aspect into a crest which forms a slight bony ridge along the middle line of the floor of the nose when the bones of both sides are in apposition. This ridge is the base of the nasal sæptum."

The sæptum divides the nasal fossæ into two parts, a right and a left nose. In a normal condition the two fossæ are about equal, and there is a space between the turbinated bodies and the sæptum which allows the free ingress and egress of air, and also serves as an outlet for the sinuses that so freely communicate into the nasal chamber.

The nose is generally referred to as an organ of smell; there its introduction formerly ended; but to-day it is looked upon not only as an organ of smell, but as an organ of respiration whose function is to warm and moisten the air before it makes its entrance into the lungs. These functions of the nose are very important; but two other purposes are further demanded of this member—namely, to act as a sewer to the various sinuses that open into this canal and to act as a sounding board to the voice.

Opposite the sæptum are situated the three turbinated bones, between which lie their meati—namely, the superior meatus between the upper and middle turbinated bones, the middle meatus between the middle and inferior turbinated bones, and the inferior meatus between the lower turbinated bone and the floor of the nasal cavity.

The superior meatus communicates by means of a foramen with the posterior ethmoidal cells and through them with the sinuses in the body of the sphenoid.

The middle meatus communicates along with the anterior ethmoidal cells by the hiatus semilunaris to the infundibulum, which communicates at its upper and anterior part with the frontal cells. At its lower and posterior part it communicates by means of the ostrum maxillare with the antrum of Highmore.

The orifice of the lacrymal duct is situated in the inferior meatus.

If the sæptum be deflected it naturally narrows, or in some cases totally obliterates, the space that Nature had intended as a drain for these various sinuses, and in time sets up a morbid condition that acts as a detriment to the economy.

Bosworth very strenuously states this fact in his chapter on diseases of the antrum, that "a catarrhal secretion in a closed cavity must give rise sooner or later to a purulent discharge."

Classification.—Lowenberg divides deflected sæptum into vertical, horizontal, and irregular. The horizontal into superior horizontal and inferior horizontal.

A better classification would be one designated by the meatus encroached upon by the deflection—namely, a sæptum that impinged in the superior meatus, as a superior meatus deflection; one that encroached upon the middle meatus, as a middle meatus deflection, and one that usurped the space opposite the inferior meatus, as an inferior meatus deflection; if the antrum cartilage of the nose were alone involved, as a cartilaginous deflection.

If the sæptum bulge out in a vertical direction through its entire course, designate is as a deflection, either anterior or posterior, according to its locality, naming the meatus it impinges upon.

This classification would locate the deflection much better, and at the same time lead to a better study of the various symptoms involved in this deformity.

Bosworth points out that a deflection that occurs in the region of the middle turbinated bone, producing a narrowing of the middle meatus, by which the rarefaction of the inspired air acts more forcibly on the middle turbinated tissues, develops a condition which presents certain characteristics resembling the nasal neuroses, by which sneezing, with watery discharges, becomes a prominent feature of the trouble.

Again, a deflection protruding into the inferior meatus is liable to aid in obstructing the orifice of the lacrymal duct.

A deflection into the superior meatus interferes with the proper drainage of the posterior ethmoidal cells. Thus a division that I have named above gives a clearer and a better insight into the various symptoms that follow when the space between the normal sæptum and the turbinated bone is encroached upon.

In two hundred and fifty cases that have applied to me in the last months for some throat or nasal disorder, I find a deflection of the sæptum occurring in one hundred and ninety-two cases out of the total number. Theile made an examination upon dry skulls and found a deviation in seventy-three and five tenths per cent. out of one hundred and seventeen skulls.

Semeleder in forty-nine crania met with it in seventy-nine and five tenths per cent., the sæptum being bent toward the left in twenty and toward the right in fifteen. In four instances the curvature was of a sigmoid outline, the bulging into both nasal fossæ in different places.

Allen, in fifty-eight, found the sæptum so much deflected in sixty-eight and nine tenths per cent. as to come in contact with the upper and middle spongy bones, while Zuckerkandl, in three hundred and seventy skulls, met with an asymmetrical position in one hundred and forty cases. In fifty-seven cases the bend was to the right, in fifty-one to the left, and in thirty-two it was S-shaped.

Mackenzie examined three thousand one hundred and two, but of these, only two thousand one hundred and fifty-two had a bony sæptum in sufficient preservation to be tested. He found that the average deviation of the sæptum in the two thousand one hundred and fifty-two skulls was about four millimetres, the greatest degree being nine millimetres and the least half a millimetre.

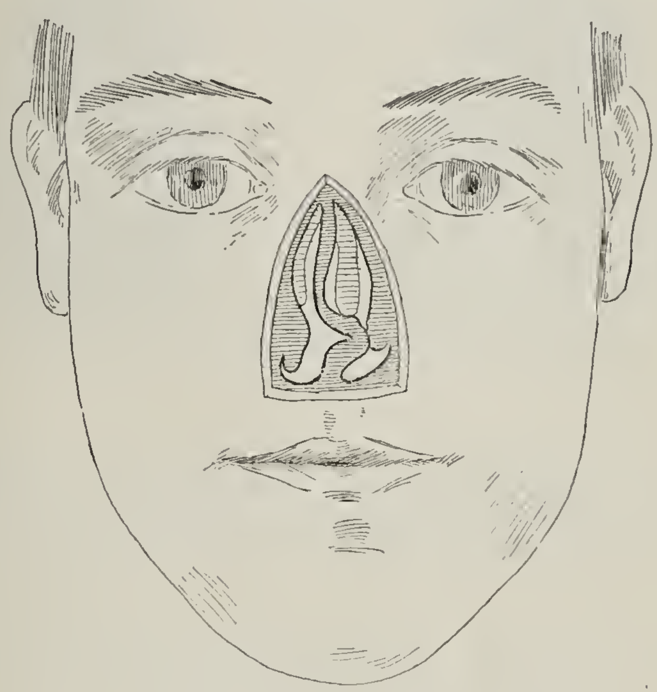

Fig. 1.—Deformity of the nasal sæptum. (From life.)

Among them no fewer than one thousand six hundred and fifty-seven, or seventy-six and nine tenths per cent., presented a more or less asymmetrical position of the sæptum. In eight hundred and thirty-eight the deflection was toward the left side, in six hundred and nine toward the right; in two hundred and five the deflection was sigmoid, bulging toward both sides at different levels.

These examinations were conducted upon the dry skulls where the cartilaginous sæptum was absent, also where the bone is liable to warp and lead to an error in statistics.

Heymann, upon living subjects, found the sæptum deflected in ninety-nine per cent.

My statistics were grouped from living subjects, from cases that were treated by me either at my office or at my Bellevue clinic. Out of this number one hundred and thirty-three were males and fifty-nine females.

I found the sæptum deflected toward the right in eighty-six, toward the left in seventy-eight cases, and twenty-eight sigmoid deflection.

The causes that produce this deformity are rather uncertain. Out of the cases from which I have compiled my statistics, only forty-nine admit ever having received an injury to the nose.

Zuckerkandl, in his researches, found the sæptum always straight before the seventh year.

I can contradict the statement by a case occurring in a boy aged five years, who was brought for hard breathing. An examination showed a foreign body in his nose. I removed it and found a rhinolith, in the centre of which was a shoe button, which had evidently been there for some time. The child had been treated for catarrh previously by another practitioner, but the nose had never been examined. I found the sæptum pushed over toward one side and a depression in the sæptum corresponding to the size of the shoe button. This sæptum I afterward operated upon and straightened.

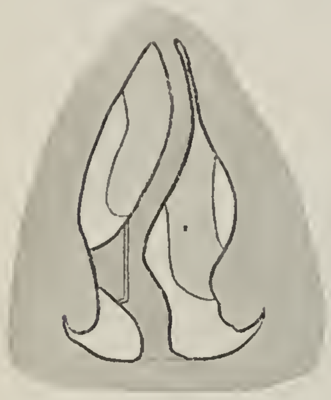
FIG. 2.—Protruding of the sæptum into right middle meatus. (From life.)

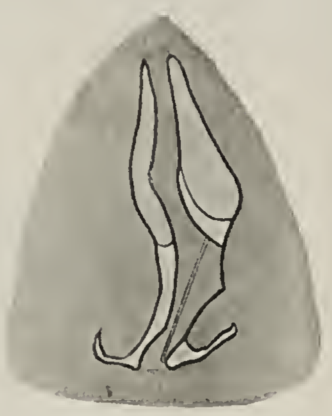
FIG. 3.—Protruding of the sæptum into the left middle meatus. (From life.)

In another case of the same nature, in a girl aged six years, I removed a large glass bead and found a deflected sæptum with the foreign body in the space of the deflection.

Chassaignac traces deflections to an overgrowth in the vertical direction, and this being prevented by the firm bony attachment, the elastic substance of the cartilage necessarily bulges out laterally into one or other nasal fossa.

Morgagni takes the same view. Jarvis reported four cases which occurred in the same family, which might be traced to heredity.

Bosworth states that this deformity is primarily the result of traumatism, and secondarily of a slow inflammatory process which results therefrom.

The symptoms which accompany this deformity are varied. Out of the hundred and ninety-two patients whose cases I report, only thirteen complained of a stenosis of the nose, and only twenty-seven in all complained of symptoms that directly referred to this member. Most of those referred to complained of their throats.

The statistics below are interesting, as they show the symptoms for which the patients applied for treatment.

Stenosis of the nose, 13; catarrh of the nose, 2; vomiting from stomach, 5; phlegm in throat, 39; deafness, 12; choking, 8; hoarseness, 3; bronchitis, 47; epistaxis, 7; impairment of voice, 24; otitis media, 3; hay fever, 8; asthma, 8; snoring, 5; shortness of breath, 1; foreign body in throat, 1; headache, 6.

All these symptoms were either dissipated entirely or greatly relieved by an operation upon the sæptum.

The ages of the patients were as follows:

Under seven years there were 2; between seven and twenty there were 40; between twenty and thirty there were 73; between thirty and forty there were 42; between forty and fifty there were 14; between fifty and sixty there were 16; between sixty and seventy there were 4; over seventy there was 1.

Of the deflections, 124 were of the lower horizontal division, 16 of the superior horizontal, 14 of the anterior vertical, 9 where the cartilage of the sæptum was involved, 28 irregular, and 1 where the whole sæptum was pushed over, making a total of 192 cases.

One hundred and twenty-six of these deflections occluded partly or entirely the inferior meatus of the nose, 26 deflections impinged upon the middle meatus, 29 involved both the inferior and the middle meatus, 2 protruded into the superior meatus, and 9 produced a stenosis by a deflection of the anterior cartilage of the nose.

In operating to correct the deformity and to reestablish a patency of the nose, I place the saw and the knife paramount to any other instrument devised for this purpose.

Adams's operation is often indicated where an external deformity of the nose is under consideration.

The drill leaves an uneven surface, and it takes much longer to correct one of these deflections than either the saw or the knife.

The knife is only applied where the deflection is wholly cartilaginous; where the deflection is bony, the saw must be used.

The treatment might be divided under three heads: the preparatory, the operation, and the after-treatment.

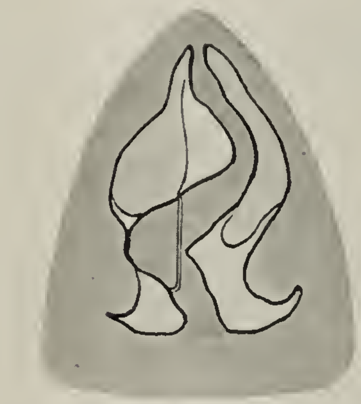
FIG. 4.—Deformity of the nasal sæptum. (From life.)

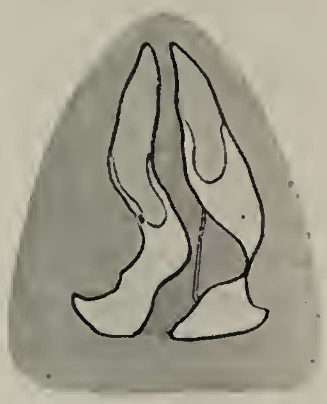
FIG. 5.—Horizontal deviation of the sæptum. (From life.)

A great deal of the success of the operation depends upon the condition the mucous membrane is in when the operation is attempted.

I have been accustomed to give five to ten grains of quinine at bedtime for a week before I operated. I have found that this greatly facilitates the removal of any congestion that may have involved the mucous membrane and at the same time reduces the hæmorrhage that takes place during the operation at least one half, and also prevents in part the formation of any croupous exudation over the cut surface.

If I find that the quinine as given above does not remove the congested appearance of the turbinated bodies that it is so common to find when the sæptum is deflected, I augment my dose by a drachm of the Warburg's tincture twice to three times a day after eating.

This preparatory treatment is very important, and upon it depends greatly the comfort of the patient after the operation. The accustomed frontal headache is done away with, the liability to secondary hæmorrhage is diminished, and a clearer view of the offending obstruction during the time of the operation is secured. Thus the saw can be guided more thoroughly and the protruding deflection removed thoroughly at one sitting.

Before operating I spray into the nose a two-per-cent. solution of cocaine. After waiting a few moments for this to act, I then apply by means of a probe, wrapped with cotton, a twenty-per-cent. solution of cocaine.

When the mucous membrane is thoroughly anæsthetized, I introduce the saw and make my cut from below upward; this allows me to guide my saw upon tissue that is not covered with blood, and to perceive how much of the sæptum it is necessary to pare off to produce normal breathing space.

In cutting from above downward, after the first cut of the saw, the mucous membrane of the nose is obscured and the nicety of the operation is interfered with.

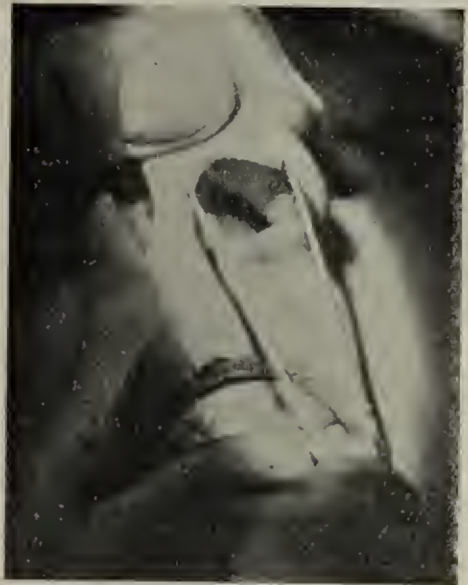

Fig. 6.—Deflection of the cartilaginous sæptum.

Where the sæptum is broad at its base I make what I call an incut. This is accomplished by carrying the blade of the saw parallel with the floor of the nose into the obstruction and then turning it upward. This makes a clean cut and leaves a perfectly symmetrical sæptum at the base. This can only be done in cases where the sæptum is greatly thickened, and must be done with discrimination, otherwise more of the sæptum is removed than was indicated, and a perforation is liable to be the sequel.

After the sæptum has been completely sawed through I pass my snare over the protruding part and cut the mucous membrane that sometimes holds it at its superior surface. After this has been accomplished and the piece removed, I administer from six to ten grains of quinine to the patient with perhaps ten to fifteen grains of the bromide of potassium. This generally prevents any secondary hæmorrhage.

The hæmorrhage from the operation only lasts a few moments in the majority of cases, and this is especially true if the case has been properly prepared beforehand, and the case is not of the hæmorrhagic diathesis.

A secondary hæmorrhage of no moment is liable to occur from one to three hours after the operation. I ward this off by putting a small plug of cotton into the nose and direct my patient to remove it about five hours from the time of the surgical procedure.

The quicker the plug is removed the better it is, as it prevents a free drainage, and if retained for any length of time will produce an inflammation and give rise to an elevation of temperature and concomitant headache. I use no dressing whatsoever to the cut surface. I allow it to scab over and let Nature heal it under this protection.

Salves retard the healing by removing the crusts sooner than indicated. I allow a wash at times if the nose be much stenosed; but this is an unusual sequence, if I have followed out the preparatory treatment above outlined.

The quinine I give for one to three weeks after the operation, Warburg's tincture when necessary.

By these means of procedure I have been able to operate in over three thousand cases of deflected sæptum, and can enumerate only three cases that have given me any concern in regard to hæmorrhage following the operation.

If the cut has been clean, the cut surface of the sæptum heals over entirely in about a month and the patient has established a patency of the nose, the object sought by the operation.

112 West Forty-fifth Street.

A CASE OF PULMONARY INFARCTION COMPLICATING DELIVERY.

*RECOVERY.**

By JOHN H. BARRY, M. S., M. D.,
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Of all the trying situations with which a physician is so often likely to be confronted, I verily believe that there are few prone to create so soul-stirring a dread as the theme of this paper. Picture, if you can, a woman whose condition threatens to unceremoniously snatch her from the bosom of her family without seeming cause or reason, and you have at once a condition calculated to warp your better judgment and excite remorseful feelings of your helplessness to aid her, most pitiable to contemplate. Embolism of the pulmonary arteries is set down for an uncommon cause of death in labor. Its causation is traceable to an arrest of or impediment to the circulation, or to a morbid state of the blood-vessels or of the blood itself. In the case to be cited, it is likely that two, and perhaps all three, of these factors were operative.

1. There was marked œdema, indicative of impaired circulation.

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* Read before the Medical Society of the County of Queens, October 27, 1896.

2. There is a history of rupture of veins in two pregnancies.

3. The distinct history of a rheumatic diathesis renders it likely that there was a morbid state of the blood itself.

A recent theory advanced by Virchow and Oppolzer closely parallels the symptoms and sudden fatalities in gaseous emboli, so called, and fibrinous emboli, and maintains that fatal results in cases of entrance of air into the uterine veins are caused by "the impaction of air globules in the lesser divisions of the pulmonary arteries," which sets up distinctly kindred symptoms to those of pulmonary obstruction. Hence they conclude that some cases supposedly due to the latter are really due to the former condition. The attack in this particular case, coming on just after the rupture of the membranes, at a time when, we are told, is the most likely one for the entrance of air into the circulation because the vagina suddenly loses its plug, creates a suggestion of the likelihood of this case having been due to the entrance of air into the uterine veins. The rupture of my patient's vein two weeks prior to delivery, carrying with it, as it does, the probability of thrombus formation, would point to this as a cause of fibrinous embolism.

Now as to the history of the case in point:

On September 23, 1896, I was called to attend, in confinement, Mrs. Mc—, aged thirty years, the mother of six children.

There had been no direct difficulty in any of her previous maternities. She had inflammatory rheumatism, confining her to bed for six weeks, about nine months subsequent to the birth of her first child.

Three weeks prior to her second labor she suffered a stroke of apoplexy, according to her physician's diagnosis, characterized by paralysis of the left arm, temporary loss of speech, and semicoma. This attack left her weak until some time after the birth of her second child.

In her third pregnancy she suffered a rupture of the internal saphenous vein of the right leg in about the same situation as it occurred in the pregnancy which is the subject of this discourse, and which will be subsequently remarked.

About midway in the sixth pregnancy she suffered from a weak general condition. She had chills, vomiting, etc., fleeting in character. She had no dyspnœa, no cough, no expectoration in any of her previous confinements, so far as can be elicited from the patient's fairly trustworthy previous history.

The patient met me on my arrival, on the night of September 23d, with the utmost suavity and complaisance. She said that the membranes had been ruptured ten minutes and that the rupture was the occasion of her sending for me. She reported no labor pains of any consequence. No dyspnœa and no cyanosis were then present.

While preparing my hands in the outer room I could not fail to remark a persistent, hacking cough, which, by reason of its incessant character, hastened my steps to the bedside.

I was instantly brought face to face with a most pitiable picture of dire distress. The patient exhibited most intense symptoms of air hunger, the cyanosis was already well marked, she had expectoration of a frothy mucus, and a dreadful sense of impending death immediately took possession of her. Upon my offering her a draught of diluted whisky she refused it, gasping out a declaration that it would choke her. I immediately summoned spiritual and professional help. There seemed to be no prospect of then saving the mother, but I calculated on interfering for the life of the child. A hypodermic injection of morphine sulphate, a fourth of a grain, and atropine sulphate, a hundredth of a grain, was administered.

The cough remained incessant and the cyanosis deepened, involving the face, the ears, the finger tips, and was associated with a cold, clammy body surface. The lungs were filled by small and large râles and rhonchi (the latter being distinctly audible), and all the signs of diffuse œdema of the lungs were well marked. Vigorous hypodermic medication and diffuse cupping were immediately resorted to, but, seemingly, to poor purpose. The former embraced what must ordinarily appear to be rash dosage, as, within a few hours, the patient had received strychnine sulphate, a fifteenth of a grain; fluid extract of digitalis, twelve minims; nitroglycerin, a fiftieth of a grain; several drachms of whisky, as well as half a pint of whisky by the mouth, etc.

It is important to mention that about two weeks prior to her delivery the patient had suffered a rupture of the saphenous vein of the right leg. It was treated by secure bandaging, and was not subsequently remarked.

It now occurred to me that that circumstance ought to be interpreted as an effort on the part of Nature to rid the economy of its intense passive congestion, and, in the light of present conditions, that it would be far from unwise to re-establish that venous depletion.

After consultation with my colleagues, Dr. Kennedy and Dr. Bumster, it was decided to bleed again at the ruptured spot. But we found that the rupture had perfectly healed, and we punctured the vein in its neighborhood, with the result of draining off about six ounces of blood.

This procedure was almost immediately marked by the first decided evidence of relief to the patient. Encouraged by this success, we withdrew about four ounces more from the median basilic vein of the right arm.

Within ten minutes labor pains made their first appearance, and the first vaginal examination revealed the head beginning to engage, with the cervix fairly well dilated.

No fœtal heart sounds could be detected, and, as we all felt assured that the child would be born dead (the reported condition of the mother having then existed somewhat over two hours), no indication for undue haste seemed to be present, other than the hope that delivery might strongly benefit the mother's circulation.

The labor pains soon gathered force, and within fifteen or twenty minutes from their advent we were most agreeably surprised by the birth of a vigorous living child, delivered in Sims's position by reason of its being necessary to maintain the elevated posture of the mother, who still suffered the most intense dyspnœa. In expecting benefit to the mother from the delivery, we were, at least temporarily, disappointed, albeit the hæmorrhage from the placental site was sought and encouraged by a slow expression of the placenta.

On the contrary, the patient sank into a profound collapse, and our well-directed efforts, though gladdened for a time by the promise of almost miraculous success, seemed consigned now to disappointment and heartrending failure. The dyspnœa, the cyanosis, and the cough were all still well marked, and the expectoration had become tinged with blood.

Scarcely daunted, however, we renewed our stimulation, resorted again to vigorous cupping, and bethought ourselves of the advisability of oxygen inhalations. A cylinder of oxygen was telephoned for to the Walton Oxygen Company and arrived with most surprising dispatch.

At last, when about least hopeful of success, our patient made a grand rally; the pulse, hitherto soft, compressible, and scarcely perceptible, gained in volume and in force.

While thus rallied, the oxygen inhalations were begun, and about 1 A. M., five hours and a half from the onset of the dyspnoic attack, we sat in calm, unalloyed satisfaction, observing a placid, contented, thoroughly grateful patient. Her subsequent history can be briefly told. Recurring attacks of milder dyspnœa appeared for five or six days; her intensely irritable and weak heart action required digitalis, strychnine, and strophanthus mixture for twelve or fourteen days. On the eleventh day the patient was seized with a severe chill. A malarial history being elicited, she was treated, with good result, with quinine, camphor, and caffeine. The urine showed as late as two weeks after labor traces of albumin. The diffuse, coarse râles quickly cleared up.

The fine crepitant and subcrepitant râles were slower to disappear. A patch of diminished breathing could be made out for ten to twelve days about midway over the posterior aspect of the right lung. There was no distinct bronchial breathing obtainable. The heart showed murmurs of mitral regurgitation and aortic stenosis lesions. The pulmonary valvular sounds were normal.

I have seen the patient within the last few days, and at this time (four weeks subsequent to labor), while cautious regarding any exertion, she is in very fair bodily and physical condition.

She complains of daily weak spells which, by reason of their distinct periodicity as to the time of day of their occurrence and her own voluntary suspension of quinine, I feel safe in assuming as due to malarial poison and amenable to the administration of quinine.

Let the comparatively meagre literature of this subject, the uniqueness of the case, and, more than anything else, the sense of pardonable pride and wholesome satisfaction I take in its outcome, be my most gracious apology for discoursing at such length upon a nevertheless most important and most interesting case.

ON RETRONASAL ADENOIDS:

THEIR REMOVAL WITHOUT ANÆSTHESIA, AND A NEW INSTRUMENT FOR MORE EFFECTIVE AND RAPID OPERATION.*

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ADENOID growths in the vault of the pharynx may be removed, in nearly every case, without an anæsthetic, and with a single application of the cutting instrument. This is coming to be the general opinion and is borne out by forty cases successfully treated in this way by the author.

Mouth breathing is most marked with anterior or high growths, which hang into or curtain the posterior nares. These are difficult to remove, and with ordinary instruments often render anæsthesia necessary; for the Gottstein curette will push them into the nares out of its reach, while the ordinary forceps not only acts in the same way, but may grasp and injure the nasal sæptum.

The rapid operation on a conscious patient renders necessary an instrument that can be properly applied to the anterior part of the pharyngeal vault, close to or even slightly projecting into the nares, so as to grasp without displacing the adenoid mass and sever it at one cut, without injury to the vomer, Eustachian tubes, pharynx, soft palate, or uvula. To meet these requirements, the author has devised a thin plate of spring steel with rounded edges, bent at right angles, so as to be attached at the lock of the forceps, reaching thence to their tip, and covering the open jaws and space between. It acts as a palate retractor, facilitating introduction. Its vertical part is so bent as to form a depression that rests between the open jaws of the forceps and fits over the edge of the sæptum, which it protects from the closing blades. Passing over the vomer, it acts as a guide, enabling the operator to push the instrument at once precisely into position, affording him a safe *point d'appui*, so that the clusters about the base of the sæptum may be firmly grasped, no movement of the child's head being likely to dislodge the instrument. An important feature is that it brings the whole mass within the jaws of the forceps, preventing any growths from being displaced forward out of reach. The instrument pushed up open forms a three-sided frame that fits over the adenoid mass, its anterior margin being the plate and its sides the blades. The forceps itself is a modification of the well-known Gradle. The jaws have been made longer to enable the operator better to reach the anterior angle of the vault, while the cutting edge faces upward and backward to conform to the shape of the pharynx. The blades are very sharp and carefully fitted together, cutting like scissors, their anterior extremities first meeting. Carelessly made instruments are often defective in this respect, the operator being obliged to tug at the tissues and inflict unnecessary pain and traumatism.

In the cut the guard is shown detached, its position when in place being indicated by the dotted outline. Two sizes of forceps are made, one for patients under five years, the other for those above that age.

For the fine workmanship shown in the instruments now in use and for the exactness with which specifications have been followed, the author must thank Mr. George Ermold, the well-known instrument-maker.

Lest this be thought an unnecessary addition to the extensive armamentarium for adenoids, the following accidents, which have occurred to various operators, may be mentioned: The pharynx has been cut through by being caught between the blade of the curette and an unusually large prominence of the atlas, a not infrequent source of danger, sometimes mistaken by the inexperienced for pharyngeal tonsil. The uvula has been caught in the forceps and cut or severely contused. The sæptum has been cut and broken between the blades of unguarded forceps, and in one case a serious traumatism was inflicted upon the Eustachian tube. These occurrences would be all but impossible with the instrument described.

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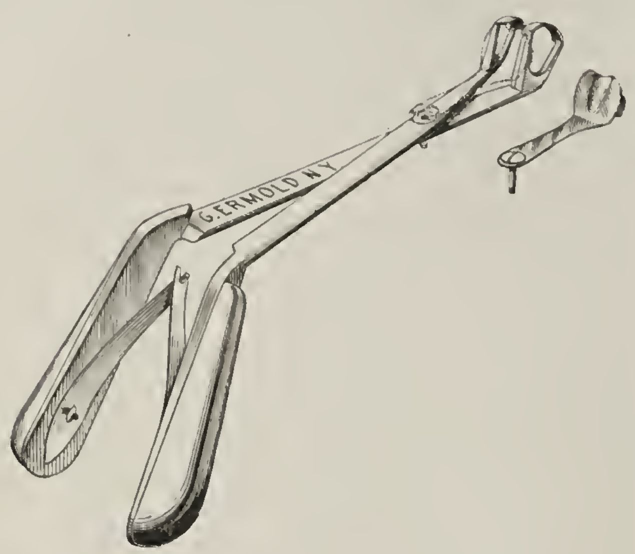
* Read before the Society for Medical Progress of the West Side German Dispensary, April 21, 1897.



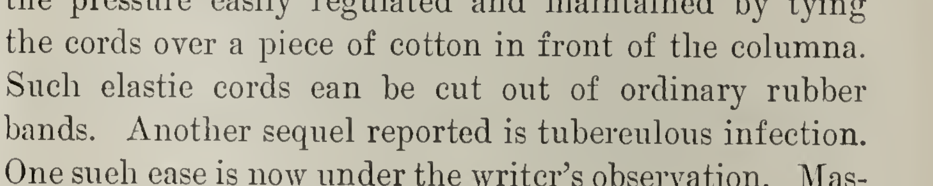
The operation takes but a few seconds of time and generally a single introduction of the forceps. In rare cases with extensive posterior or low growths, one sweep of the Gottstein curette may supplement the use of the forceps.

The child—for nearly all cases are in young children—is placed in the lap of an assistant, who sits facing the operator, and one of whose arms passes across the patient's chest, pinioning the elbows, while his other is placed upon the forehead, steadying the patient's head against the assistant's shoulder or chest. The assistant's legs are crossed in front of the patient's, which must not touch the floor. Another way is to wrap the patient in a sheet up to the chin. Still another, the "crucifixion method," consists in the assistant's passing his arms from behind under and in front of the outstretched ones of the patient, and then placing the palms over the sides of the latter's head. Some Dobell's solution or listerine may be sprayed through the nostrils. A mouth gag is then placed in position; but this may often be dispensed with. A tongue depressor exposes the soft palate, under which the tip of the guard plate is quickly inserted and carried forward and upward, retracting the palate until it embraces the sæptum, and the blades rest against the vault of the pharynx. Firmly held in this anterior angle of the pharyngeal space, the plate now covering the sæptum and nares in front of the mass of growths, and the blades being at the sides of the latter, the shafts of the instrument are raised nearly to the upper teeth, when it is quickly closed and withdrawn by depressing its tip and raising the handles. If turned out laterally, the cut tissue may be lost. The forceps being introduced, it should be opened the moment it has passed behind the soft palate; for if it is passed up closed, as is often done, the tissue will be pushed aside, causing failure of removal and making one or more repetitions necessary, a very undesirable thing with a nervous, frightened child.

The cut tissue is usually found in the forceps; if not, the finger should explore the pharynx, but a re-introduction will very rarely be found necessary. Morning and evening spraying with solution of boric acid should be kept up for three days. On the day following the operation the nasopharynx should be washed out with some Dobell's solution and peroxide of hydrogen by means of a postnasal syringe.

As a rule, no untoward results follow. Dangerous hæmorrhage is very rare; nevertheless, two fatal cases have been reported. To check the hæmorrhage, one of the best styptics is a solution of acetate of aluminum, which does not clot in the objectionable way that the iron preparations do. It may be applied on a piece of cotton with a bent applicator introduced behind the palate. Spraying with iced Dobell's solution, or peroxide of hydrogen, is often effective. For a severe bleeding, not checked in this way, the author would suggest drawing three or four small cotton packs, wrung out of solution of acetate of aluminum, up into the nasopharynx by means of cords, preferably elastic ones, passing through the nares. In this way the bleeding could be effectually checked and the pressure easily regulated and maintained by tying the cords over a piece of cotton in front of the columna. Such elastic cords can be cut out of ordinary rubber bands. Another sequel reported is tuberculous infection. One such case is now under the writer's observation. Mastoiditis is said to have followed.

In nearly every case the operation is very successful, and where there has been great obstruction an extraordinary improvement follows. At the Northwestern Dispensary we see many cases of rhachitis. Patients that are mouth breathers will often fail to improve under the most careful treatment until the adenoids are removed, when convalescence will be rapidly established. So, too, in many cases of rhinitis, bronchitis, chorea, reflex cough, eye trouble, deafness, malnutrition, laryngismus, laryngitis, night terrors, enuresis, and aprosexia, the adenoids must be removed before cure can be effected. At all ages, from one week to twenty-eight years, the author has obtained excellent results from the simple method of operation described. The over-thorough procedures of some, who practise "bone-scraping" with a Gottstein curette, often cause cicatrization of the pharynx, and are wholly unnecessary. Of course, most cases can



be safely and rapidly operated upon by this instrument, and it is the one most frequently used in the author's dispensary practice. The curette, however, must be kept quite sharp and have a correct curve. Half the instruments sold are useless because of defects in these respects. A properly curved, well-made Gottstein will remove posterior as well as most anterior growths, and for children under one year of age it is, perhaps, the best instrument. The shape shown here (see cut) has been found best. Three sizes are necessary. When operating with the curette, it should be carried rapidly upward, its tip against the nasal sæptum, and its cutting edge kept horizontal until it rests rather firmly against the vault, when, with a quick sweep, raising the handle and keeping up the pressure until the vertebral prominence is nearly reached, the growths are severed. The improved forceps here described requires even less skill, cuts with less hæmorrhage, and removes the particular growths that cause nearly all the obstruction. Its use is less likely to be followed by a dry pharynx, especially in the hands of an unskillful operator, and with it, as easily as with the curette, the operation is done without anæsthesia; hence, it is to be preferred for general use, while it will be found much the better device for anterior or high growths. Every operator should have both instruments.

INTUBATION IN DIPHTHERIA

BEFORE AND SINCE THE USE OF ANTITOXINE.

REPORTS OF FIFTY-SEVEN INTUBATIONS IN PRIVATE PRACTICE.*

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As to the advisability of intubation or tracheotomy in diphtheritic stenosis of the larynx the great preponderance of opinion in America is in favor of intubation. In Europe tracheotomy is the favored operation, but intubation has been gradually growing in popularity, until now it is rapidly displacing its older rival, and will doubtless soon occupy the position there which it does in this country. Having, in a previous paper, discussed the relative merits of the two operations, I shall content myself by saying that I believe intubation to be the preferable operation in the vast majority of cases.

There has been an enormous mass of statistics brought forward, both by friends and opponents of antitoxine, to prove both its value and its uselessness in the treatment of diphtheria. Often the same set of statistics, notably those of hospitals, is used on both sides. Statistics are valuable only when they are correct, and mental reservation does not alter them to suit the reporter's wishes.

Dr. Joseph Winters, of New York, has been most indefatigable in his opposition to antitoxine. He sees absolutely no good in it, and says, from his personal experience in numerous fatal cases treated from the beginning, "Antitoxine does not exert the slightest influence for good in any severe case of diphtheria."

Dr. Winters's opposition has been so extreme, so violent, and so persistent, that one who has seen severe cases of diphtheria before and since the introduction of antitoxine must feel either that his prejudice has blinded him to facts, or that he has set out determined to see and record only the failures and none of the successes of antitoxine. One is not surprised to find that the cases which Dr. Winters has reported have since been reported by another (Dr. Brannan) and prove his detailed reports unfair, misleading, and absolutely unreliable. Having disseminated his papers so widely, he has done more than any other man to retard the more general use of antitoxine in this country.

A recent article * by Mr. Lennox Browne places him still among the list of those opposed to antitoxine. Mr. Browne's paper is quite a remarkable one—remarkable in its effort to deny any value to antitoxine and place the credit somewhere else. Denying that antitoxine has decreased the mortality, but asserting rather that it has increased it, he soon makes the statement: "The improved death-rate can only be ascribed to the much greater medical vigilance and nursing care which all cases have received since a spurt has been given to the study of this disease." And because of this, the spurt, he says: "The introduction of antitoxine must be gratefully hailed by both advocates and detractors."

Finally, disapproving of antitoxine, he advances or rather approves the theory that the benefits derived from the use of antitoxine are due simply and solely to the albumin contained in the serum, and thinks that equal benefit might be derived from the injection of a normal saline solution or of simple sterilized blood serum.

Mr. Browne, knowing the high mortality of laryngeal diphtheria, says: "It is not impossible that an anatomical reason could be given why the larynx, when attacked with diphtheria, is more susceptible to improvement, under the serum treatment, than the fauces." This is probably thrown in to discredit statistics relating to laryngeal diphtheria, and he omits the anatomical reason referred to.

He also charges that favorable reports are generally unfair and one-sided, and states that not a single extensive report favorable to antitoxine can be considered satisfactory, since the conditions of comparison of the old with the new treatment have in no single instance been made on an equal basis. He says that cases in children under five years of age, being always grave, should form the basis of comparison.

The ordinary contention of opponents, made to offset facts as shown by figures and results, is that the present epidemic is mild, that we are in the "dip of the mortality curve."

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* Read before Syracuse Academy of Medicine, February 8, 1897.

* *Journal of Laryngology*, December, 1896.

It will be admitted without question that laryngeal diphtheria is one of the most fatal diseases known to us. A laryngeal involvement of the diphtheritic process is always a grave and serious occurrence, no such case ever being, in any epidemic, mild. Up to two years ago many physicians of large practice had never seen a single case of true diphtheritic croup end in recovery without operation, and those who had, regarded such a happy event as almost accidental. The mortality of laryngeal diphtheria without operation was ninety to ninety-five per cent. With operation, the mortality was reduced to about seventy-two per cent., a death of three in every four under the most favorable circumstances. These cases are surely the ones to put to the test the efficacy or the inefficacy of this new remedy.

I have seen quite a number of children with laryngeal diphtheria recover under the injection of serum and without an operation, but I shall confine my further remarks to the very worst cases of all, to those in which the stenosis had become so great that an operation was required to relieve the child from impending suffocation.

I have intubated fifty-seven children for laryngeal diphtheria, the diagnosis in each of the first thirty-six—that is, up to January, 1895—being based on clinical evidence alone, having occurred prior to the appointment of a city bacteriologist. In the remaining cases the diagnosis was made both clinically and bacteriologically, each showing the presence of the Klebs-Loeffler bacillus, some of them mixed.

None of these intubations occurred in my own practice, none were hospital cases, and, as a rule, I was called by the attending physician only when the laryngeal obstruction was marked—too often only when the child was moribund. In no case of laryngeal stenosis did I advise against an operation because the case seemed hopeless, but always in favor of giving the child a possible chance for life. In but two cases was an operation refused; once by the parent, and once through the opposition of another consultant. In both cases the patient died. Many were moribund when intubated. Some lived but a few minutes to a few hours after the operation, but some of the most desperate cases ended in recovery. In a few, but only a few, even of the fatal ones, they were not relieved in breathing. On two occasions I had seven consecutive deaths, then one or two recoveries to keep my courage up, and so the work went on. The cases are not picked ones, but include the good and bad alike.

These fifty-seven intubations may be divided into two classes: those occurring prior to the use of antitoxine, numbering thirty-four, and those occurring since, numbering twenty-three. Those of the first class were intubated between January 10, 1893, and November 24, 1894. None received antitoxine. As a general thing the treatment consisted in the administration of iron, strychnine, brandy, and in some cases bichloride internally; locally to the pharynx, sprays of peroxide of hydrogen, papoid, permanganate of potassium, iron, etc. After the intubation, steam in one form or another; in many, calomel sublimation. Nearly always a croup tent was built. On the second or third day, if the child lived that long, I was anxiously on the lookout for a recurrence of the dyspnœa, indicating an extension of the membrane to the bronchi.

Table of Intubations Prior to the Use of Serum.

	Cases.	Died.	Recovered.
Under two years	3	2	1
Two to five years	17	12	5
Five to eight years	7	6	1
Eight to fourteen years	7	6	1
Total	34	26	8

Mortality, seventy-six per cent.; recoveries, twenty-four per cent.; under five years, mortality, seventy per cent.; recoveries, thirty per cent.

From November 29, 1894, to the present time there are, in the second class, occurring since the introduction of antitoxine, twenty-three cases. Three of these patients died within a couple of hours of intubation and before antitoxine could be administered, leaving twenty cases which at some time during the course of the disease received antitoxine. When it had not been already used before I saw the case, I urged its use. But of the twenty patients, only nine received an injection of serum prior to the operation, often but a few hours before; the remaining eleven receiving their first injection after an intubation had been done to relieve the immediate dyspnœa—that is, comparatively late in the disease. There are several reasons for this. In many cases the parents sent for a doctor only when the croupy symptoms were marked and dyspnœa was urgent, the immediate need being relief from impending suffocation. In many, the physicians had no faith in the serum, or feared its reputed bad results.

The treatment of these twenty intubation cases was much simpler than that of the thirty-four earlier ones. In many of them the serum was the only remedy, local or internal, employed; in some, strychnine and iron, and occasionally brandy when indicated. As a rule, no sprays or topical applications were made to the pharynx. The air of the room was kept moist, and steam was often employed on recurrence of dyspnœa. In one case that ended in death, calomel sublimation was used. The antitoxine employed was of different makes, but mainly Schering's and Aronson's. In the earlier cases about a thousand units were given, repeated in twelve to twenty-four hours; latterly larger doses—namely, fifteen hundred to two thousand units—and in future I shall use, if anything, larger doses.

Table of Intubations in Conjunction with Serum.

	Cases.	Died.	Recovered.
Under two years	3	2	1
Two to five years	14	3	11
Five to eight years	3	0	3
Total	20	5	15

Mortality, twenty-five per cent; recoveries, seventy-five per cent.; under five years, mortality, thirty per cent.; recoveries, seventy per cent.

The average time during which the tube was worn in the cases which recovered was a little less than five days.

Accepting Dr. Winters's dictum that the fatal cases be reported, I give a brief account of the five cases ending fatally:

No. 35.—Aged nineteen months, patient of Dr. Werfelman. The doctor was first called on November 29, 1894, when the child had been sick four days with sore throat. Nasal, pharyngeal, laryngeal, and conjunctival diphtheria. Gibier's antitoxine was injected. Difficulty in breathing progressing, I intubated four hours later, relieving dyspnœa perfectly. Child did well for five days, when sudden dyspnœa occurred, and the tube was removed, relieving the breathing somewhat. Tube reintroduced. Breathing easier, but during the next twenty-four hours dyspnœa increased, and, with great difficulty, the tube was removed, the child nearly dying during its extraction. The breathing was no better with the tube out, and the child died from suffocation within an hour, from extension of membrane to bronchi.

This was the first laryngeal case injected with serum in this city, and one of the earliest in the United States.

No. 36.—Aged four years, patient of Dr. Anthony, of Warners, N. Y. Child had been sick with nasal and pharyngeal diphtheria for five days, and croupy symptoms for two days. I was called to intubate January 1, 1895. Child cyanotic, epigastric and episternal recessions. Intubation gave complete relief. Patient did well for five days, when the tube filled up and was removed. The breathing was then perfect, and the tube was not put back. In two days, January 7th, a recurrence of the membrane in the pharynx, nose, mouth, and larynx occurred, and intubation with a larger tube became necessary. On the following day, January 8th, the child received its first injection of Gibier's antitoxine, this being the twelfth day of the disease, and the eighth from the first intubation. Child died of asthenia the following day.

No. 39.—Aged three years, patient of Dr. J. J. Moore. Moribund, cyanotic when doctor first called. I saw patient half an hour later and intubated. Antitoxine was injected. Intubation did not improve the breathing, and the child died an hour later.

No. 45.—Aged three years, patient of Dr. F. W. Sears. Sick four days when it received first injection. No improvement next day, and second injection made. I was called the following night, when the child was cyanotic, unconscious, and pulseless, and intubation was done with no relief to breathing. The tube was removed and a larger one inserted, but without any benefit. Child died in an hour.

No. 46.—Aged seventeen months. Child sick several days when Dr. Loomis was called during the night because of "croup," and the dyspnœa being urgent, I was sent for and intubated with complete relief. Two hours later antitoxine was injected. In twenty-one hours the child died.

All of these cases showed the presence of the Klebs-Loeffler bacillus.

Quinine, admittedly a specific in malarial fever, administered during or just before a paroxysm, has no effect on the immediate paroxysm, but may prevent or modify the next one. Antitoxine requires from eighteen to twenty-four hours to produce its effects on the membrane locally, and if the patient die from suffocation within twenty-four hours of the injection, the death can not be alleged as a failure of antitoxine.

Death from suffocation in diphtheria is due to laryngeal or bronchial stenosis, not, excepting in very small children, from tracheal obstruction. Intubation or tracheotomy will relieve the laryngeal but not the bronchial obstruction, and if the antitoxine is administered so late that the bronchi are becoming invaded when the serum is injected, a fatal issue is generally the case.

Of these five deaths, No. 39 died within an hour of the intubation and injection, and No. 46 within twenty-three hours. No. 36 received its first injection eight days after the first intubation, and twelve days from the beginning of the disease, and within twenty-four hours of death. Eliminating these three cases, the mortality would be reduced to ten per cent., and recovery increased to ninety per cent. There then remain two cases, one of them, No. 35, being the first case injected, and before the proper dosage was understood; the other, No. 45, being injected on the fourth day of the disease.

These figures do not, however, state the whole case. I have seen during the past two years many cases of laryngeal diphtheria, the obstruction not being great or immediately threatening, have advised against an operation, with the hope that under the serum the child might recover without operation, and many have done so. Not one has died. Some have later required intubation, and are included in the foregoing cases. Without antitoxine nearly all would, in all probability, have required intubation.

As to the paralytic sequelæ: None of these fifteen recoveries, so far as I am aware, have shown any paralysis.

In the early days, urticaria sometimes followed the injection, but not latterly.

No case has shown any bad effects of the serum, the antitoxine acting rather as a heart stimulant, the patients being brighter in every way and recovering more rapidly than under any previous form of treatment which I have seen.

To myself, my own experience is most convincing. To you, it may not be, but in connection with other reports of a similar nature it should be.

Rosenthal reports twenty intubations in conjunction with serum with eighteen recoveries; O'Dwyer, thirty intubations with twenty recoveries; Louis Fischer, thirty cases with thirty recoveries,* and my own twenty cases with fifteen recoveries—in all, one hundred cases with eighty-three recoveries, being a mortality of seventeen per cent. when antitoxine is used in conjunction with intubation for laryngeal diphtheria.

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* *Journal of Laryngology*, February, 1897.

In conclusion:

(1) Laryngeal diphtheria, in any epidemic, is never mild, but has always had a mortality of from ninety to ninety-five per cent., reduced by operation, intubation or tracheotomy, to from seventy-two to seventy-six per cent.

(2) The report of my cases shows a mortality of intubations without serum of seventy-six per cent.; in conjunction with serum of twenty-five per cent., and, eliminating cases of death within twenty-four hours of injection, a mortality of ten per cent. The reduction of mortality from seventy-six to ten per cent. is to be credited to antitoxine.

(3) Antitoxine should always be administered as early as possible, and in laryngeal cases without waiting for the bacteriologist's report. If this is done it will usually prevent an extension to the larynx, or, if the larynx is already invaded, an early injection will frequently cure without need of operation.

(4) No child should be allowed to die of laryngeal stenosis without an operation, preferably intubation, and serum should be injected at once regardless of the stage of the disease, as most desperate cases often end in recovery.

ON THE USE OF THE ANTISTREPTOCOCCIC SERUM OF MARMOREK.[*]

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MARMOREK,[†] the distinguished disciple of Pasteur and Roux, announced in February, 1895, his discovery of an antistreptococcic serum and reported, among other diseases less frequently treated by its use, that forty-five cases of veritable erysipelas had been checked at once and cured by this serum. It was then tried by other observers, not only in this disease but in various infections of streptococcic origin or of a mixed nature, in which the streptococcic germ played an important part. I can make no pretense now to give aught but a very cursory review of the progress of this remedy. In brief, it is as follows: In April, 1896, at the Obstetrical Society in Paris Charpentier presented a collection of forty cases of puerperal infection, in which, however, the streptococcic antitoxine had been used in conjunction with local and other treatment, with a mortality of thirty-five per cent. In twenty-five of these forty cases a bacteriological examination showed the presence of the streptococcus alone in sixteen instances, with a result of nine recoveries and seven deaths. In nine cases the streptococcus was associated with the staphylococcus or the *Bacillus coli*, with five recoveries and four deaths. Charpentier concluded that thus far the treatment advocated had not fulfilled the expectations that had been raised.

Other observers have confirmed its excellence in true erysipelas, but a great variation of opinion has been shown relative to other affections, not only of streptococcic infection, but developing from the pneumococcus or *Bacillus coli*, for in each of these two latter infections the antitoxine has been resorted to with occasional benefit. The ill effects of the injections have been generally *nil*. One death, however, apparently from its use, is published by Bar and Tissier. Locally it is painless, and is usually well borne. Sometimes a little urticaria or erythema is afterward developed—rarely an abscess.

The quantities resorted to at first were six to ten cubic centimetres, repeated two or three times a day; but later administrators of the treatment have carried the amount injected up to sixty to a hundred cubic centimetres *per diem*. In my own trials I have seldom gone beyond ten cubic centimetres every six hours, except in one instance of peritonitis, where one hundred and one hundred and twenty-two cubic centimetres were given for two days in succession. The cases are here presented in a condensed form.

CASE I. *Ilio-lumbar Abscess of Tuberculous Origin.*—Temperature, 99°; opened in groin and lumbar region, pus then showing only a few tuberculous bacilli. Temperature began rising on fifth day, and on seventh was 103°+. Pus showed streptococcus and staphylococcus infection. The septic oscillations continued from 99°+ to 104°+ until tenth day, when six cubic centimetres of antistreptococcic serum of the Pasteur Institute of Paris, kindly supplied me by Professor Hermann Biggs, was injected in the buttock, without any local or general reaction. This was followed the next day by a temperature less than that of the day previous. On the twelfth day another injection in the same region was made of nine cubic centimetres of the same serum, which resulted, the following day, in a decided drop in the fever to less than 99°. A third injection of three cubic centimetres was then given as a clincher, but the temperature again went up in the next twenty-four hours to 102.8°, though from that time it gradually dropped to nearly normal in about four days, without other than the continuation of the peroxide-of-hydrogen irrigation resorted to from the beginning of the infection.

It was considered, on a review of the case, that the temperature fall and the patient's general improvement could hardly be ascribed to the antitoxine, but rather to the natural subsidence of infections in drained and irrigated cavities, and to the better drainage established about that time. No blood examination was made.

CASE II. *Chronic Suppurative Osteitis of Femur with Secondary Involvement of Knee Joint.*—Femur freely opened in its lower medullary canal and cancellar condyloid end for exit of pus, December 21, 1896. Joint, which was then distended, showed by aspirator needle only slightly turbid serum. It was therefore irrigated by 1-to-5,000 bichloride solution. But as temperature kept up, joint was incised on each side, irrigated and drained with a good result *quoad* the joint, but temperature elevation persisted without any evidence of abscess elsewhere or in the bone. The patient refused the advised amputation. A slight pneumonic consolidation of lower end of the scapula also developed. To this was added an old phthisical softening at apex of left lung. His temperature curve was daily from 99° to 102° or 103°. Examination of the pus and cultures made from it showed streptococcus in abundance, and in the sputum tuberculous bacilli were obtained. On January 20, 1897, six cubic centimetres of antistreptococcus serum of the manufacture of Parke, Davis, & Co., was injected twice a day for four days, or eight times in all, without local or general effect. No impression having been made on his condition, on the 30th of January the thigh was finally amputated, with a rapid recovery of the patient.

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[*] Read before the Section in Surgery of the New York Academy of Medicine, April 12, 1897.

[†] *Annales de l'Institut Pasteur*, tome ix, p. 71.

In this case the serum therapy failed utterly.

Case III. *Amputation of the Breast for Carcinoma.*—Done by Halsted's method; sloughing of the top angle of the axillary flap; infection of the general wound. Systemic sepsis shown by cultures of wound discharge and of the blood to be due to streptococcus invasion. On fifth day pleuritic infection. Temperature, 104°; pulse, 136. Twenty cubic centimetres (Pasteur Institute, Paris) antistreptococcic injection given December 12th and repeated ten cubic centimetres eight hours later, without either local or general change. Result of case—death. Though not germane to the point at issue, I wish to say that the line of incision proposed by Halsted has been followed now in four instances by sloughing, fortunately only slight, and without much disturbance except in this case—which is the second death only that I have had in over two hundred mammary amputations. I have therefore given up the use of this incision.

Case IV. *Compound Fracture of the Thigh with Involvement of Knee Joint.*—Suppuration of thigh and joint; sepsis; amputation; pneumonic infection and lobar abscess, temperature ranging from 100° to 104° daily. Antistreptococcic serum (Parke, Davis, & Co.'s) injected, without avail, repeatedly—ten to twenty cubic centimetres *per diem* for nine days without benefit. Sputum first raised showed no streptococci, but after injections (six injections) streptococci then found there. The last injection developed a general erythema which lasted twenty-four hours.

Case V. *General or Extensive Purulent Peritonitis from Appendicitis.*—After operation—removal of appendix, washing out with sterile salt solution, etc.—an injection, eight cubic centimetres (all that was on hand), was given, and the next day another, twenty cubic centimetres, was administered. Death occurred same day. This case should be cast out as too advanced for hope of benefit. The following case was, however, one in which the remedy was tested most thoroughly.

Case VI. *General Suppurative Peritonitis from Perforation of the Appendix.*—A man, aged twenty-six years. Lateral laparotomy with wide incision done five hours after acute symptoms appeared, prodromic symptoms having existed about twenty-four hours. No adhesions whatever. Treated by repeated flushing of eviscerated, pus-smeared intestines and of emptied peritoneal cavity with hot saline solution and by extensive drainage with weak iodoform gauze. Though at close of operation patient's general condition was good (temperature, 101.5°; pulse, 112), it was deemed advisable to conjoin to the treatment the use of the streptococcus antitoxine (Paris make). This was given hypodermically in twenty-cubic-centimetre doses every four hours. As the supply of the Marmorek manufacture gave out, it was supplemented by that made by Parke, Davis, & Co. In the first twenty-four hours a hundred cubic centimetres of the antitoxine were administered, and in the second term of like length a hundred and twenty cubic centimetres were given, without any local reaction and without influence on the temperature, which remained at or near 102°, or on the vomiting or meteorism. On the pulse, however, toward the end of the second day it dropped gradually to 60 per minute, and showed marked irregularity. These circulatory interferences passed away within twelve hours on ceasing the antitoxine injections. No other evidence of depression was noticed. The patient succumbed on the fifth day after the operation. Microscopic examination showed also in this case streptococci in large quantities.

Early in the investigation of the merits of this serum the German reports were of an adverse character, and one, the strongest condemnation of it, came from Petrouschky,* of the Institut für Infectionskrankheiten in Berlin, who stated that no counteracting influence had been obtained on animals infected by streptococci, and that the serum could not be recommended for use in the human subject. This opinion is in the main corroborated by the few who have tried it in that country. Aronson,† however, called attention to an important fact, that he found that the Paris serum (Marmorek's), as well as others, lost all protective power if it was kept some time. This may account for some of the variations in the different reports, but does not invalidate the general results, which are, in the main, adverse to the utilty of the serum. As regards the activity of the various serums on the market at the present time, the few tests that have been made accord the first position to the Paris serum. I may here state that my own thanks are due to the liberality of Messrs. Parke, Davis, & Co., who, through Dr. Fite, their agent, donated to the New York Hospital the serum of their manufacture used in five of the preceding cases.

It may be of interest to present an outline of the results that have been presented. Take first the treatment by it of scarlet fever.

In Scarlet Fever.—Marmorek ‡ treated ninety-six scarlatina patients with his streptococcic serum, hoping to stop or control the complications produced by a streptococcus associated with the unknown agent of scarlet fever, which is, I believe, the present status of the infection. The effect was to cause rapid disappearance of glandular tumors, discharge from the ears, and albuminuria. The dose usually employed was ten cubic centimetres, running up to a total of ten to thirty cubic centimetres. In grave cases the total was forty to eighty cubic centimetres.

Baginsky # administered Marmorek's serum to fifty-seven scarlatina patients. Nine received other treatment or had another disease. Twenty-seven received a smaller dose than Marmorek recommended, but the temperature fell after each injection. No one died, and there were no serious complications.

In sixteen others the serum produced no effect, and several died in spite of large doses; others had suppurating adenitis. But his death-rate before the serum was used ranged from twenty-two to twenty-four per cent.; the death-rate with serum, fell to fourteen per cent. (forty-eight cases, seven deaths).

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* *Centralblatt für Bakteriologie*, etc., August 15, 1896.

† *Berl. klin. Wochenschrift*, No. 32, 1896.

‡ *Medical Week*, 1896, p. 204.

# *Ibid.*, 1896, p. 143.

In explanation of the varying effects in scarlatina, the investigations of Renon* are instructive. He obtained a streptococcus from the blood of a scarlet-fever patient. Tested on mice and rabbits successfully inoculated by this infection, it was absolutely unaffected by Marmorek's serum. The same serum, however, checked the growth of a streptococcus obtained from Marmorek, and this streptococcus was a more virulent one than the streptococcus from the scarlet-fever case. So that it could be inferred that streptococci of various kinds are found in men as well as in animals, some of which are subject to Marmorek's serum and some of which are not.

Mery † also succeeded in isolating in cases of scarlatina seven varieties of streptococcus obtained from the throat, urine, blood, and a glandular abscess. Six of these streptococci proved refractory to Marmorek's serum.

In Erysipelas.—As reverse testimony to the efficiency of this serum in erysipelas, attention should be given to the remarks of Courmont,‡ who found that while Marmorek's serum, which, as is known, is prepared from the streptococcus associated with diphtheria, protects rabbits against this special streptococcus, it would not against injections of streptococci obtained from human erysipelas, and, still more strangely, the animals previously immunized by Marmorek's serum and thus inoculated die quicker than non-immunized animals. Hence the failure that others have had in the treatment of erysipelas by the antistreptococcic serum.

Wound Infection.—The best case in the treatment of wound infection is that given by Coleman and Wakeling # who reported improvement from the use of this serum in a case of general septicæmia occurring in a physician, one of whose patients had recently died of puerperal septicæmia and from whom, through a wound, he had been infected.

Examination of the blood proved it to be a streptococcic inflammation. The first injection of serum (twenty cubic centimetres) was made three days after the onset of the disease. The patient had been unconscious for two days, and four hours after the injection consciousness returned. Injections were continued one or more times daily, until the supply of serum was exhausted. Up to that time the patient had improved. He then began to grow worse, and continued to do so until the injections were resumed. His condition improved immediately and he finally recovered.

Lilienthal ‖ presented a case of profound sepsis due to osteomyelitis. When the patient was almost moribund 12.5 cubic centimetres Gibier's antistreptococcic serum were given, and repeated in a few hours. Four additional doses were given within the first two or three days. Temperature, 103°. At the end of the sixth dose improvement began, though the temperature again rose to 104°. After the eighth dose consciousness returned and there was continued progress toward recovery.

Gerster * had used the serum with advantage in osteomyelitis with multiple abscesses, also in sepsis from gangrene of the gall bladder, and in a case of appendicitis with signs of sepsis and general peritonitis; though he at the same time said that three other grave cases of septicæmia had recovered without the antitoxine, and that caution should be had in drawing conclusions as to the value of the antitoxine treatment.

Cheyne † believed he had obtained marked benefit in three extensive operations on the neck and mouth by using the antistreptococcic serum before operating, administering it for from two to four days previously, in doses of from ten to twenty cubic centimetres daily. He reports that the wounds looked and did better than usual.

In Surgical Peritonitis.—But little is reported. In this infection Denys and Leclef ‡ used horse serum after injections of toxines and living cultures in increasing doses.

They reported three cases of peritonitis after surgical operations, with two recoveries; one case of pyæmia in which the injections stopped all unfavorable signs; three cases of grave puerperal fever, one with erysipelas, metastatic abscesses, and pneumonia, in which all the patients recovered.

Improvement was very rapid, so much so that the patient on several occasions declared himself well in twelve to twenty-four hours. The dose employed was from sixty to a hundred and eighty cubic centimetres in from eight to thirty-six hours.

The initial dose should be from sixty to a hundred cubic centimetres. The only ill after-effects were erythema and occasional muscular pains.

In a later article (*Medical Week*, page 169) the same observers recommend distributing the serum as much as possible around the focus or the origin of the lymph vessels passing through the infected region.

Durham # has recently advised, in the same line practised by Cheyne, just referred to, that on the day before a laparotomy the antistreptococcic serum should be injected into the peritoneal cavity (not always an easy matter), so as to increase the germicidal action of the peritoneal fluid and to set up a protective leucocytosis in the peritonæum. (As to this suggestion, I may say that, thanks to the help of Dr. G. P. Biggs, pathologist to the New York Hospital, I have proved that, as might be expected, the antistreptococcic serum has no effect whatever in a test culture on streptococcic germs themselves, and also that injections of the serum into the peritoneal cavity provoke no inflammation.)

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* *Medical Week*, 1896, p. 203. † *Ibid.*, February 19, 1897.

‡ *Ibid.*, March 19, 1897.

# *British Medical Journal*, September 12, 1896, p. 647.

‖ *Transactions of the New York Academy of Medicine*, March 8, 1897.

* *Transactions of the New York Academy of Medicine*, March 8, 1897.

† *Practitioner*, April, 1897.

‡ *Medical Week*, 1896, p. 19.

# *Lancet*, March 13, 1897.

In Puerperal Septicæmia.—Besides the cases early alluded to by Charpentier, Adam * treated a patient aged twenty-one years, who had puerperal fever following a laceration into the rectum, with Marmorek's serum in doses varying from four to seventeen cubic centimetres. In all, eleven injections were given of two different brands of serum, a hundred and seven cubic centimetres in all. One kind of serum, that obtained from Lyons, reduced the temperature, the other, Marmorek's own, did not. The treatment was begun on the eleventh day of the fever and continued to the twenty-third. The patient recovered. Adam concluded that the serum kept the patient from getting worse. He thought the dose should be at least ten cubic centimetres.

McKerran † reported three cases of puerperal fever treated by the serum, one of which ended in death. He expressed himself in doubt as to the effect of the serum other than in producing a steadying of the pulse and an improvement of the subjective condition of the patient. The temperature was not much affected. The dose used was ten cubic centimetres.

T. C. ‡ treated a case of septicæmia following childbirth by an injection of ten cubic centimetres of serum. No good effect followed, and the patient died twenty-four hours later. At the time of injection, 9 P. M., the temperature was only 102.5°. The following morning it was 105°. No bacteriological examination was made, but there was reason to think that the patient was infected with germs from a case of erysipelas.

Williams # reports fourteen cases of severe puerperal septicæmia (six of them his own) treated by antistreptococcic serum. Two of these ended fatally. In three cases no benefit followed the injections. In the others perspiration and glandular secretions were thereby excited, and the temperature and pulse-rate were lowered. The use of a large initial dose (twenty cubic centimetres), followed, if need be, by other smaller ones, is advocated. As some puerperal fever is not streptococcic in its nature, a bacteriological test should be made, if possible. Of the two fatal cases, in one the course of disease was apparently not affected by the serum; the other died "during convalescence," the fever having fallen. The doctor who made the post-mortem considered the death to be due to the serum.

Richards and Grandin and Edmunds also give each a case of puerperal septicæmia successfully treated by the antitoxine.

Ill Effects.—It has been generally stated by all who have resorted to the serum that it has been well borne. Though Netter * injected antistreptococcic serum in a little girl suffering from purulent pleurisy. Twelve days later she had pain in the abdomen, fever, scarlatinoid eruption, pain in joints, etc.; in other words, the entire series of symptoms occasionally met with as the result of injections of antidiphtheritic serum.

It can, I think, therefore be concluded from this rapid review (1) that the antistreptococcic serum of Marmorek has some good effect in erysipelas, and probably in scarlatina. (2) That it is yet to be proved as valuable in puerperal septicæmia, the present testimony leaning against its efficacy in such infections. (3) That it is worthy of a further test in cellulitis, osteomyelitis, and surgical peritonitis (*i. e.,* non-uterine), in which experience is yet lacking, and in which the originating or associated germ is often the streptococcus. Further, that the dosage should be much increased, say up to sixty to a hundred and fifty cubic centimetres *per diem,* in which doses it can be considered as a fairly safe remedy.

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* *British Medical Journal*, December 26, 1896, p. 1825.

† *Ibid*, October 10, 1896, p. 1033.

‡ *Ibid.*, July 18, 1896, p. 176.

Ibid., October 31, 1896, p. 1285.

* *Medical Week*, 1896, p. 69.

THE TREATMENT OF TYPHOID FEVER.†

BY CONDICT W. CUTLER, M. D.

FROM an analysis of about a hundred cases of typhoid fever under my own personal observation with a mortality of nearly ten per cent., and from the statistics of others showing a mortality ranging from seven to fourteen per cent., it would seem that the death-rate from this disease depended more largely upon the character of the epidemic than the plan of treatment employed.

During the past fifteen years numerous methods of treatment have been recommended and faithfully followed by careful observers, but after a thorough trial have either been given up or greatly modified to suit the judgment of the attending physicians. Many of these methods of treatment have had for their object the elimination of the typhoid poison, the stimulation of the central nervous system, the reduction of temperature, or intestinal antisepsis. Among the most prominent of these may be mentioned the Brand system of baths and the Woodbridge guaiacol treatment; but owing to the unsatisfactory results often obtained these plans of treatment have been so modified that Brand and Woodbridge would hardly recognize them as their own. And so it has been with all other so-called systems of treatment. They have been popular for a time, then modified, and at last given place to some other method with hopes of a better result. To show how unsatisfactory and varied are the present methods of treatment one need but look at the expressions of opinion of some of the most experienced practitioners given at a meeting of the Academy of Medicine on October 20, 1896:

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† Read before the Society of Alumni of Bellevue Hospital, March 3 1897.

Dr. W. Gilman Thompson stated that the cold-bath treatment caused enteric fever to run the shorter and milder course and reduced the mortality one half; but it did not prevent relapses nor the occurrence of ordinary complications, and it did not interfere with other modes of treatment.

Dr. Morris Manges said that experiments had been made with cultures of typhoid bacilli and with serum, but little had yet come from them clinically. As to intestinal antisepsis, Stern and others had shown that they were not effectual even on micro-organisms less resistant than the typhoid bacilli.

Dr. Francis Delafield said that the bath treatment was absolutely impossible for a considerable number of patients; that he had treated thirty cases with the Woodbridge treatment carried out literally at first, and afterward in a modified form. The modified form consisted in continuing only the calomel and carbonate of guaiacol ingredients of the pill. Later, finding that calomel given so frequently was producing sore mouth, he substituted for it minute doses of Epsom salts and continued the guaiacol. He could see no particular change in the patients under the different methods of treatment, and it was not at all probable that drugs would diminish the mortality of the disease.

Dr. A. B. Ball thought that the reason why the doctors at Bellevue had given up the bath treatment some years ago was that they did not employ the rubbing while giving the bath. He believed a high temperature was beneficial in typhoid, tending to kill the bacilli, and that when baths were given it was often best to give them at a temperature of 85° or even 90° F.

Dr. W. P. Northrup said that at the strong recommendation of a doctor he had used in a number of cases Fränkel's toxine. These patients, although recovering, suffered such great discomfort that if he were forgiven for thus allowing them to suffer, he never would repeat the offense. He thought in some cases it might be advisable to apply warmth to the extremities during the cold bath.

Dr. Louis Waldstein believed that calomel was the best drug to use in typhoid fever, especially if given early in the disease.

Dr. A. P. Dudley held that baths had no anatomical or physiological basis relative to typhoid fever. The scientific treatment was eliminative, and the bathing did not eliminate the poison. It subjected the patient to unnecessary shock and endangered the heart, whose muscular fibre was weakened by the disease. It was well known that death in this disease was usually attributed to heart failure. The treatment which he employed was citrate of magnesium to wash out the intestinal tract.

Many of us who have subjected our typhoid patients to all plans of treatment, systematic plans which have been indorsed by physicians of large experience, and unsystematic plans which we have thought suited to some special case, and have watched some of our patients get well and others die, have undoubtedly come to the same conclusion as did the editor of the *Philadelphia Polyclinic*, who sums up our present knowledge of typhoid fever and its treatment as follows:

"With good treatment and good nursing the mortality of typhoid fever should not exceed seven per cent., and, except under very unfavorable circumstances, it might be reduced to less than five per cent. In seventy-five cases out of a hundred typhoid-fever patients left to themselves without interference on the part of the physician or nurse will get well. In seventy cases out of a hundred typhoid-fever patients will survive poor medication, provided that they have good nursing. And in sixty-five cases out of a hundred they will probably survive even bad medication and bad nursing. Furthermore, the severity of the cases encountered at different times varies very greatly. Fifty or sixty cases in succession may recover with any treatment or no treatment. Three or four cases in succession may perish in spite of the best treatment. Hence, conclusions as to the comparative merits of different plans of treatment can not be drawn from any but the mass of statistics. In general, the simpler the treatment in typhoid fever the better. The less the number of drugs given the better. The less quantity of whatever single drug will answer the purpose that is taken the better. The more closely Nature is followed, and the more cautiously rash interference is shunned, the better."

Sharing these views to a great extent myself, I present for your consideration a few suggestions concerning the treatment of typhoid fever, with nothing new in the way of drugs, but only in the method of systematic administration, which I believe has never been done before.

From the hundred cases of my own above referred to, seventy were treated heroically with packs, baths, intestinal antisepsis, antipyretics, calomel, Epsom salts, and all recognized forms of treatment except the serum antitoxine, and with the average success, while the remaining thirty consecutive cases were treated much less energetically, and with only one death and one relapse.

Recognizing typhoid fever as a self-limited disease with a natural tendency toward recovery, it occurred to me that better results could be obtained in aiding Nature by maintaining the patient's strength during the period of the disease, and insuring perfect mental and physical rest, than by any other means that we could employ. In the future, with Widal's serum test, it may be possible to make a positive diagnosis of typhoid fever during the first week or ten days of the disease, but unfortunately in the past this has been impossible, and therefore equally impossible to determine the value of the many so-called abortive methods of treatment.

All cases coming under my observation with symptoms which pointed toward the disease were at once ordered to bed, placed under a strictly liquid diet, and given a large dose of calomel, followed in a few hours with Epsom salts. After the bowels were thoroughly moved, one large dose of Warburg's tincture was given every morning on an empty stomach, and followed during the day with about fifteen grains of quinine in solution, given in divided doses. The majority of these patients have within a week entirely recovered, but I have not considered them as abortive cases of typhoid fever, for other cases under the same treatment have shown the characteristic symptoms of the disease apparently without this treatment having had the slightest effect.

As soon as the diagnosis of typhoid fever was established all medication was stopped, and a peptonized milk diet was ordered in three to five ounce doses every two hours, and continued as the only article of diet until convalescence was assured. When the diagnosis of the disease is made there are before the patient from two to four weeks of continued fever, great mental, nervous, and physical prostration, restlessness, and delirium. These conditions must be met and provided for. Every organ and tissue in the body has its physiological function deranged and is acting improperly. To overcome these conditions it is necessary to give nourishing but easily digested and assimilated food, proper stimulation to the depressed nervous system, and to sustain the overtaxed organs and tissues with sedatives to insure quiet and rest, so that as little work as possible may be required of them.

To meet the first indication nearly all physicians agree that a milk diet gives the best result. It seems extremely important that the milk be peptonized, for thus being partially digested artificially, it gives the digestive organs less work to do, and digestion, absorption, and assimilation are more perfectly performed. The gaseous distention of the abdomen was in the majority of my cases but slight when this diet was strictly adhered to.

To meet the second requirement, that of proper stimulation, again most physicians agree that whisky gives the best result. The quantity to be given and the frequency depend entirely upon the condition of the patient; but it should be given at once when the diagnosis is made, and continued until convalescence is thoroughly established. It is usually better to give it in water well diluted and at frequent intervals, rather than in large doses at longer intervals. In all my cases I have given it in this manner, and its results have been satisfactory, both in regard to the continued effect of the stimulant and to its being well retained by the stomach. None of the patients received less than two ounces a day, and many of them from five to eight ounces, while one patient took over a pint of whisky a day for a brief period.

To meet the third requirement, and thus insure mental and physical rest, and to lessen nervous exhaustion, morphine was used, and to it I consider my good statistics are due. It was used liberally and frequently in all the thirty cases from the time the diagnosis was positively made until the disease had run its course. Some of the patients were given it in small quantities with the whisky—never more than a sixteenth of a grain at one time—others were given it by hypodermic injection in larger doses less frequently. When it agreed with the stomach and no nausea resulted from its use it was given with the whisky; but if there was any disturbance of digestion then hypodermic injections were resorted to. The amount given during the day was enough to produce a decided physiological effect of the drug on the nervous system. The smallest amount given in one day was about a fifth of a grain, and the largest amount two grains; but if the indications had demanded it larger doses would have been given. Decided stupor and coma are contra-indications for its use, and it is therefore important that the patients under this treatment be carefully and intelligently watched. It was perhaps fortunate that nearly all my thirty cases were under the care of trained nurses, so that the symptoms could be carefully noted, and the amount of morphine intelligently given as the indications warranted. Small doses were given at first by the mouth. If nausea, indigestion, or constipation resulted, then it was given by hypodermic injection. The dose was gradually increased in size until the respirations were slightly reduced in number and the patient remained quiet and drowsy, with a decided tendency to sleep much of the time. As the fever subsided and convalescence began the amount of morphine was gradually diminished, and stopped entirely when there was no longer any rise of temperature. In none of these cases was the morphine habit established, nor were there in any of the cases bad results or symptoms which could be attributed to the use of the drug. Constipation did not seem to be a contra-indication for its use, or a slight amount of albumin in the urine. The delirium was always quieted by it, even in cases where it was quite active, and it had a decided stimulating action on the depressed central nervous system, as shown especially in the improved condition of the heart's action and pulse.

As to the effect of morphine on the course of the disease, it apparently had no special influence. The length of the disease was not decidedly shortened in any of the cases. The milder cases ran a little shorter course than usual, and the serious cases a little longer. The temperature ran about its usual course, in one case reaching 107°, and in many of them from 104° to 105°. Diarrhœa was certainly checked in most of the cases, while constipation was produced in others. The most striking effect of the morphine was manifested on the nervous system. There was in the early part of the disease less restlessness and wakefulness, and in the latter stages less delirium and twitching; and throughout the whole disease less headache and general complaints which we so often hear. Dryness of the tongue was present about as usual, certainly not worse, while the skin was more active, perspiration being quite profuse at times, evidently aiding in the elimination of the typhoid poison.

But one patient suffered with a relapse. She was a young woman who went successfully through a serious attack of the disease, and had a normal temperature for a few days. She then had a return of the fever with very severe diarrhœa, and died, apparently with exhaustion, in about two weeks after the relapse. A post-mortem was allowed, and on autopsy very extensive ulcerations were found in nearly the entire length of the large intestine.

Severe hæmorrhage occurred in but one case, and slight hæmorrhages in but two or three others. Most of these patients received no other medication except the morphine, the complications being treated usually without drugs, as follows: To relieve the dryness of the skin and to aid elimination and perspiration, the entire body was sponged off with tepid water once or twice a day and rubbed dry with a coarse towel, the friction acting as a strong nerve stimulant. If the stomach became irritable, and if the patient vomited, all nourishment and stimulation were given by the rectum, and the stomach allowed an absolute rest, a few teaspoonfuls of water only being given at a time to relieve thirst, until that organ was quieted. If the bowels became distended with gas, a soft-rubber rectal tube passed high into the bowel and left in position would relieve the symptoms. If constipation was present, an enema of soap and water was given, and usually with good results. If a laxative was necessary, drachm doses of Epsom salts dissolved in water and *crême de menthe* given every half hour for three doses would produce the desired result.

How to reduce the temperature in typhoid fever has long been a disputed problem to the medical profession. We have all used the numerous antipyretic coal-tar products, and most of us, I think, have discarded them as dangerous and worse than useless. I remember once calling a well-known consultant physician to see a case of typhoid fever with me. I was especially worried about the continued high temperature. It could be reduced for a few hours with some antipyretic, but would soon rise again to an alarming degree. When asked his advice he said: "Leave the temperature alone. More typhoid patients die from antipyretics than from the fever. High temperature is seldom the cause of death." I have learned to quite agree with him, and now unless the temperature is excessive it does not alarm me.

In none of these thirty cases were antipyretics used, and in but one case was it necessary to reduce the temperature by means of cold water. This was in the case of a young woman whose temperature went up to nearly 107°, and she became comatose. In her case the wet pack was used, and in an hour the temperature fell some four or five degrees, and with the fall of temperature the comatose condition disappeared, and there was general improvement in her condition. It is reasonable to suppose that this patient would have died had her temperature not been reduced in a few hours. Patients with a temperature of from 103° to 104° seldom require a bath, and tubbing for a temperature of 102° or 103° is neither practical nor advantageous in the large majority of cases. In temperatures of 106° or over, a reduction of temperature by the extraction of heat by cold applications is necessary, but only for the same reason that it is necessary in sunstrokes, and not because it is the temperature of typhoid fever and due to a toxic poison generated in the body.

For the large hæmorrhage an ice bag was placed over the abdomen in the right iliac region, and an extra hypodermic of morphine given. The hæmorrhage did not recur. If it had, I should probably have resorted to the administration of gallic acid, and perhaps ergot, but I doubt if any internal medication given to check hæmorrhage in typhoid fever has ever been of any service. The slight attacks of hæmorrhage received no treatment.

The nervous symptoms and diarrhœa were so controlled by the morphine that no other medication was required. Should the diarrhœa be profuse, exhausting, and not controlled by the morphine, the use of subgallate or salicylate of bismuth and naphthaline would have been followed by good results.

Whether the good results here recorded from the use of morphine in enteric fever will be borne out by its further use, time alone can answer; but from my experience it is the most satisfactory plan of treatment, both to the patient and to the physician, and with the lowest rate of mortality. Complications may arise which would demand the use of other agents, or perhaps necessitate the withholding of the morphine, but such cases would be exceptional ones.

The action of the morphine, although relieving many of the distressing symptoms of the disease, seems to act in some way as an antitoxine, and lessens the depression of the central nervous system, which is most frequently either the direct or indirect cause of death.

What may be expected from the treatment of typhoid fever in the future with antitoxine serum it is too soon to predict, but investigations are going on in this direction which may lead to good results.

With still brighter prospects for success have pathologists been experimenting with typhoid bacilli in antityphoid vaccination.

The method employed consists of inoculation of the dead typhoid bacilli.

The experiments of Wright and Semple, although not conclusive, seem to warrant the belief that persons thus vaccinated are protected against typhoid fever.

It is uncertain how long this protection lasts, but as the vaccination can be practised without risk to the life or health of the individual, revaccination can be performed whenever there is great danger of typhoid infection.

The Society of the Alumni of the Newark City Hospital.—At the recent annual meeting the following officers were elected: President, Dr. Gilbert Van Vrancken, of Passaic; vice-president, Dr. Maurice Osler, of Newark; secretary and treasurer, Dr. F. C. Jacobson, of Newark.

HERPES ZOSTER FOLLOWING THE ADMINISTRATION OF ARSENIC IN A CASE OF EPILEPSY.

By L. PIERCE CLARK, M. D.,
FIRST ASSISTANT PHYSICIAN, CRAIG COLONY, SONYEA, N. Y.;
MEMBER OF THE NEW YORK NEUROLOGICAL SOCIETY, ETC.

It is interesting to ascertain whether the administration of arsenic for the bromic acne attending large doses of bromide in epilepsy has a direct causative influence upon herpes zoster. Some writers have declared that the association of herpes zoster and the administration of arsenic is not one of direct ætiological relationship. I myself have seen some three hundred cases of epilepsy in which the bromic acne was partially controlled and removed by the administration of ordinary-sized doses of arsenic, but in no case did herpes zoster make its appearance. Hutchinson (Prince A. Morrow's *Drug Eruptions*, page 73) has reported some fifteen cases, in which he suggests that arsenic was the sole cause found for the skin lesion, yet he draws a very modest conclusion as to its direct causative effect.

I desire to place upon record an additional case of herpes zoster in which the ordinary medical dose of Fowler's solution of arsenic had been administered in a case of epilepsy which presented a profuse bromic acne.

P.W., a man, aged twenty-four years; nativity, United States; occupation, piano-maker; duration of epilepsy, seven years. He had taken forty grains of bromide three times a day, and, in consequence, a very profuse bromic acne made its appearance upon the chest, face, and back, which ran rapidly on to the pustular stage. After the administration of arsenic (two drops of the solution given three times a day for four days), in connection with the bromide (seven grains three times a day), he complained of a "painful rash" on the chest and back. His bowels moved two or three times during the day, and he had a general ill-defined feeling of lassitude. The rash had made its appearance in the axilla, which was "painfully itching and burning." Upon examination, a red papulo-vesicular rash was found just above the nipple on the left side of the thorax, in the axilla, and between the superior internal angle of the scapula and the vertebral column. In places the vesicles had ruptured, leaving a moist, scaly condition often seen in this skin affection. There was a temperature of 101°, pulse 98, dryness of the mouth, and some slight headache.

He was placed in bed, the arsenic was withdrawn, and a powder of opium and prepared chalk was applied. Great care was exercised lest the vesicles still remaining unruptured should be broken. As is ordinarily the case, the greater part of the eruption ran its regular course of rupture, desiccation, and cicatrization, and the patient was entirely well in ten days.

I report this case in order that additional data may thus be collected, and determine, if possible, the ætiological relationship that exists between the administration of arsenic and herpes zoster. If such relationship exists, I think it is quite rare. Indeed, this case might point more clearly to the concomitance of this patient's skin lesion with the administration of arsenic than as a sequent; but the rapid onset of the herpes zoster after the administration of arsenic, and the rapid recovery of the skin affection after the withdrawal of arsenic, leads me to think that it exists less as a coincidence than as a causative factor.

THE IMPORTANCE OF THE EXACT CORRECTION OF REFRACTIVE ERRORS IN SCHOOL CHILDREN.*

By WILLIAM MERLE D'AUBIGNÉ CARHART, M.D.,
ASSISTANT SURGEON, MANHATTAN EYE AND EAR HOSPITAL;
INSTRUCTOR IN DISEASES OF THE EYE AND EAR
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Oculists are frequently asked the reasons for the increase in recent years in the number of children wearing glasses. Twenty-five years ago it was the rare exception to see spectacles on the eyes of children, and few adults ever wore any glasses for distance, except in cases of high myopia. Even now I occasionally run across a person who still clings to the idea that only elderly people need to wear glasses, and then merely for close work.

Two causes have been operative in increasing the number of persons wearing glasses. First, the advancement of medical science has enabled the profession to correct many refractive errors which formerly were not recognized as such. Within five years the extended use of the Javal ophthalmometer has added an instrument of precision to the outfit of the oculist, while the advent of post-graduate schools of medicine and the reforms in methods of undergraduate instruction have given the general practitioner an appreciative clinical knowledge of ophthalmology. Not only is the general practitioner better able than ever before to do justice to his patient in making a correct diagnosis of refractive error, but the oculist has also gained in recent years through improvements in technique and inventions of new instruments. In the pioneer days of ophthalmology the few oculists gathered in the large cities laid the foundations of our science wisely and well, and we are now enjoying the results of their labors. So great has been the diffusion of the practice of ophthalmology that nearly every town of any size has now the benefit of the services of an oculist.

The second cause for a larger number of persons wearing glasses at the present time than in former years is that every one uses his eyes much more extensively for close work than did his immediate ancestors. The daily newspaper is an example of the many new factors in the production of eye strain inherent in our complex civilization. As knowledge has deepened, and culture has expanded, we have required more of our children, and so the schools, public and private, put much greater burdens upon the rising generation than did the district schools of bygone days. Dictation exercises play now a large part in the method of instruction, much to the detriment of weak eyes. There is a real danger in the present tendency to crowd the greatest possible acquisition of knowledge into the years of childhood and early adolescence. Healthy eyes, with little or no refractive error, bear with apparent impunity a surprising amount of overwork, but any considerable refractive error or any local or constitutional disease or dyscrasia at once inserts an element of danger into the close application to study necessary to keep up in the classes of our schools and academies. It may be doubted whether the eyes of the children of the present generation are intrinsically any weaker or more diseased, as a rule, than the eyes of their forefathers were, but it is evident that the demands of school life of to-day have necessitated a great increase in the aid given by glasses.

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* Read before the Medical Society of the County of Westchester, N. Y., March 16, 1897.

The eyes of the human race seem to be passing through a period of adaptation to meet the new conditions of our modern civilization. Man in the state of savagery is farsighted, as are most if not all animals. A very small amount of nearsightedness would severely handicap a savage in the struggle for existence, and any tendency to myopia in prehistoric man was undoubtedly ruthlessly cut short by the sure survival of the fittest. Infants are now born hypermetropic, an atavistic proof of their origin. Civilization has totally changed the environment of man. The horizon of the savage was the boundless prairie or the lofty hilltops. His civilized brother finds his vision bounded by city walls and his accommodation taxed continually by books and newspapers. It is an axiom of physiology that a functionally active organ attracts an abundant blood supply. Continual application to close work, especially during the years of childhood and early adolescence, when the tissues of the immature eyes are soft and yielding, causes first a congestion of the entire organ, and then a yielding of its structure. This yielding of the eyeball occurs both at its posterior pole and at its anterior surface, the first causing a lengthening of the optic axis and the second the development of astigmatism due to alteration of the curve of the cornea. As the eyeball lengthens the refraction of the eye tends to become myopic. In so far as this change helps to bring the focus for useful vision nearer, it is a distinct advantage over the farsighted eye, so necessary to the savage. But, unfortunately, myopia caused by congestion is usually if not always a progressive pathological process, bringing attendant diseases in its train, and secondly the development of astigmatism is an unmixed evil in all cases, causing, as it does, marked impairment of vision and asthenopia.

What will be the final effect of the strain of civilization upon the refraction of the eyes is hard to say, but it is to be hoped that extreme myopia will not be our manifest destiny. The salvation of the race undoubtedly rests in this, as in other things, with the child. When once myopia and astigmatism have developed, humanity demands that these imperfect eyes be protected by glasses, thus aiding the survival of the unfit so far as vision is concerned. But in childhood we can prevent the development of the evils which in adults we can only palliate. By avoiding as far as possible abuse of the eyes under unhygienic conditions, and by prompt and exact correction of every refractive error, we can prevent harmful congestion of the delicate tissues of the immature eyeball and escape that distention which causes high refractive error. Indeed, it is claimed that high degrees of myopia have distinctly decreased in frequency in the large cities of recent years, and, if the facts are as claimed, the benefit of proper treatment is strikingly demonstrated, since city life is exceedingly favorable to the development of distention of the eyeball, and immigration is constantly increasing the population of the Atlantic seaboard with foreigners of low vitality and inherited tendency to disease.

In the early stage of the process of distention, when the eyeball is still hypermetropic and when the degree of astigmatism is not large, exact correction of the refractive error is very effective in arresting its development. The case book of every oculist is filled with instances of relief of symptoms of asthenopia following the prescription of proper glasses. So slowly does distention progress in its incipiency, and so effective at that time is proper treatment, that only recently have the development of astigmatism and the transformation of hypermetropia into emmetropia and thence into myopia been demonstrated satisfactorily. Increase of myopia being more rapid and frequent, as was to be expected of the later stage of the process, has been often observed, and myopic astigmatism for the same reasons has been long known to develop and increase, while hypermetropia and hypermetropic astigmatism have both been usually supposed to be congenital and fixed. This process of distention goes on, as may be easily inferred, more surely and quickly in eyes weakened by local or constitutional disease or dyscrasia, and such eyes are instances of so-called essential myopia. I have recently seen the *Report of the Elmira Reformatory* for the year 1896, and in the medical portion of the report I note the statement that high degrees of astigmatism and of myopia are prevalent, which would go to show the pathological character of ocular distention in these degenerates.

While examining the eyes of one thousand school children, in preparation for a paper read before the Ophthalmological Section of the New York Academy of Medicine,* I was much impressed with the importance of exact correction of every instance of refractive error, by observing numerous cases of blepharitis and of asthenopia occurring,in children either wearing glasses manifestly of improper character or wearing no correction at all. Public opinion outside of the large cities does not yet realize the danger of neglect of exact correction of refractive error, and too often it is supposed to be safe to intrust the fitting of glasses to refracting opticians, jewelers, and other persons with optical goods to sell. For children such a course is even more hazardous than for adults, since the congestion of the easily distensible eye of childhood is aggravated by wearing glasses of improper character, while the adult eye, in addition to being more intolerant of a wrong glass, is more unyielding and less likely to receive permanent injury. The determination of the refraction of children, even for oculists, is often of exceptional difficulty, owing to spasm of accommodation and a multitude of other reasons. In unskilled hands the chances of a correct estimation of astigmatism, for instance, are small indeed, and it is not remarkable that so many children have the strain of hypermetropic astigmatism made harder to bear by being compelled to wear minus spherical lenses, which, by stimulating the accommodation, hasten the tendency to myopia. I am sure the profession will agree with me that the determination of refractive error is, and should be, a part of medical practice, and that the present custom in country towns of allowing men not graduates in medicine to fit glasses is pernicious to the last degree, since it puts into unskilled hands a task which requires all the judgment and diagnostic acumen of an experienced oculist to perform with safety and success. The delicate tissues of the eyes of our children are too sacred to be tampered with by any one who has taken a few weeks' course in some school of optometry. I have before me a copy of a "diploma of graduation" of such an "optical institute" given as a certificate of being "duly qualified to practise theoretical and applied optics." The law is very much in the way of these gentlemen, as a regent's certificate is necessary to practise medicine in this State, and so the bill defeated last year has been once more introduced, in an amended form, entitled "An Act to Regulate the Practice of Optometry in the State of New York." It is to be hoped the protests of the profession represented by committees of this society and others, ably seconded by many of the manufacturing opticians, have been heeded for this session of the legislature at least, but eternal vigilance on our part will be required lest the influences supporting the bill rush it through at some other session, or even in the last hurried days of this one. This bill legalizes the present gross infringement upon medical practice, and refracting opticians, graduates in optometry, whatever that may be, and any others, need only to receive a license from a State board of examiners in optometry to be put upon the same footing in law as any member of our profession for the treatment of optical defects by correction of refractive error. I will not weary you by reciting instances of harm done by the mistakes of these gentlemen. Any oculist can give numbers of cases where glasses have been placed on eyes afflicted with lenticular opacities or in advanced stages of retinal disease, while improper correction of refractive error is the rule with them and not the exception. Only one of this State board of examiners is required to be a physician. The others need have little or no medical training whatsoever, and yet their license under this new bill would give the public to understand that holders of such certificates were fully competent to make a correct diagnosis of refractive error and to apply the proper treatment. It should never be possible to turn over medical practice in this way to those who have not secured a degree of doctor of medicine.

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* The Refraction of the Eyes of One Thousand School Children, with Particular Reference to Astigmatism, as Shown by the Javal Ophthalmometer. *New York Medical Journal*, April 17, 1897.

In conclusion, I think I have shown that refractive error in civilized man is due to the changed conditions of his environment, and that childhood represents the critical period of life when proper treatment is of supreme importance. The strain of accommodation caused by the increased demands of modern schools in the effort to crowd into the early years of childhood a superficial knowledge of a multitude of subjects has resulted in harmful congestion of the delicate ocular tissues. In the plastic years of childhood the eye is soft and yielding, and ocular distention, both anteriorly and posteriorly, is the natural consequence of undue strain. Increase of the optic axis, or tendency to myopia, is more marked because the eyeball is weaker at its posterior pole, but alteration of the curve of the cornea, causing astigmatism, also occurs in the majority of cases. The bright side of the picture is that exact correction of refractive error in childhood usually arrests its development, and once safely past the years of immaturity the adult eye does not often succumb under hygienic conditions, with good health and strong vitality, to the ordinary demands of civilization.

Since the foregoing was written, the following events have occurred: Assembly bill No. 459, as amended, No. 840, was reported favorably by the committee on general laws, but failed of passage by three votes. Senate bill No. 1001 perished in committee, thus ending the matter for this session. But the *Optical Journal* says the bill will undoubtedly be very much alive again at next winter's session. However, we may hope that experience gained this year will enable the profession to continue their successful resistance against such measures.

No. 147 West Forty-fourth Street.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 8, 1897:

DISEASES.	Week ending June 1.		Week ending June 8.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	0	13	4
Scarlet fever	205	14	221	20
Cerebro-spinal meningitis	0	0	1	0
Measles	220	10	284	8
Diphtheria	256	38	285	39
Croup	2	0	14	9
Tuberculosis	136	108	192	103

Changes of Address.—Dr. Charles C. Osborne, to No. 109 West Eighty-fourth Street, New York; Dr. John C. Schapps, from Brooklyn to Pueblo, Colorado; Dr. Floyd Stewart, from St. Louis to room 309, Medical Building, No. 124 Baronne Street, New Orleans.

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NEW YORK, SATURDAY, JUNE 12 1897.

THE DISTRICT OF COLUMBIA CRUELTY TO ANIMALS BILL.

ELSEWHERE in this issue we print the text of the bill as reported favorably to the Senate on May 13th by the Committee on the District of Columbia. In substance, it is the same bill as was before Congress a number of months ago, which we printed at the time. We can not see that it has lost any of its mischievous features. It is entitled For the Further Prevention of Cruelty to Animals in the District of Columbia. Its objects might better have been described as to prevent the Bureau of Animal Industry, other scientific agencies in the District, and Washington physicians from ever having any further share in discoveries that are to be arrived at in no other way than by experiments on animals, and to provide a clear field for the self-righteous who conceive it to be their divine right to regulate other men's conduct.

We print also a letter from the Secretary of Agriculture, the Hon. James Wilson, to the chairman of the Senate committee on agriculture and forestry, protesting against the passage of the bill. Mr. Wilson's argument seems to us incontrovertible and in no wise strained. He remarks, among other things, that the bill is modeled on the British law—a law, we may mention, that has seriously hampered experiment in Great Britain—but with important safeguards of that law omitted. He correctly infers, it seems to us, that such an act must be construed as in effect forbidding infection experiments except under the impracticable condition of keeping the subjects of experiment continuously anæsthetized.

One of Mr. Wilson's illustrations of how trouble is likely to be caused by the enforcement of such measures as are specified in the bill is so cogent that we here repeat it: "There is a serious outbreak of an apparently contagious disease among horses in a Western State. The State veterinarian, being in doubt as to its nature, sends some blood or a piece of affected tissue to the department, and asks for an investigation and an early report to guide him in the measures that should be adopted for the suppression of the outbreak. An inoculation experiment is found to be necessary, and a horse must be used. Before this inoculation can be made, a certificate must be given that the object of the experiment will necessarily be frustrated unless it is performed on a horse, ass, or mule, and that no other animal is available for this purpose. The application for this certificate must be signed by three physicians duly licensed to practise and actually engaged in practising medicine in the District of Columbia, and also by a professor of physiology, medicine, anatomy, medical jurisprudence, materia medica, or surgery in the medical department of a duly established reliable school or college [this absurd phrase is quoted textually from the bill] in the District of Columbia. After this application is forwarded to the Commissioners of the District it does not become available until a period of one week has elapsed. During this time the material sent for examination has putrefied and the investigation can not be made. And yet we are told by the senator that 'the bill under consideration does not interfere in the least with inoculation experiments.'"

A remarkable point in the bill is its discrimination in favor of dogs, cats, horses, asses, and mules. When an experiment is to be undertaken on a cow or calf, why would it not be equally proper to present evidence that it is necessary to employ a bovine animal, according to the requirements in the case of canine, feline, and equine animals? Perhaps the members of the Washington Humane Society think that bovine animals are less sensitive to pain than the other brutes mentioned; and this impression they may readily have obtained from what is very often to be observed in the practice of calf vaccination—namely, that a calf will allow flies to crawl over its eyeballs *ad libitum*, without taking the trouble to wink.

The President of the United States, we are bound to believe, would be careful to the extent of his power in the selection of the four inspectors whom the bill charges with the work of still further harassing licensed experimenters, but they would have to be persons willing to serve without compensation, that is to say, members of the Washington Humane Society or zealots bent primarily on pleasing that society. We abhor cruelty as much as any member of that organization, but, like an overwhelming majority of the medical men of the United States, we shall always oppose such absurd provisions as are contained in this bill. Cruelty to animals, at least of an experimental sort, is sufficiently guarded against in the District of Columbia by laws now in force; this bill is unnecessary on that score, but, by hampering experimenters, it threatens not only the progress of medical knowledge, but also the prosperity of cattle-raisers, horse-breeders, and all other persons engaged in animal industries. In addition, it is particularly odious in that its passage is avowedly intended in great part to exert an influence as an example for State legislation. It is bad in intent, and it is not free from crudities of style; witness the following expressions: "Duly established reliable school or college" and "completely under the influence of ether or chloroform sufficiently to prevent the animal from feeling pain."

THE CARE OF THE PERINÆUM IN HEAD-LAST DELIVERIES.

In the *Centralblatt für Gynäkologie* for May 15th, Dr. W. Rubeska, a professor in the Prague school for midwives, remarks upon the paucity of directions in the text-books of obstetrics as to the management of the perinæum during the birth of the after-coming head. He quotes a description, by Ostermann, of Berlin, of his method, and then gives an account of his own, which, he remarks, must often have been employed, so simple is it, although the first published description of it appeared only so recently as in 1893, in his *Lehrbuch der Geburtshilfe für Hebammen.*

As soon as the child's mouth has cleared the vulva, whether extraction or expression has been employed, he seizes its feet with one hand and lifts it high over the mother's abdomen. Then with the other hand he manipulates the head, stretching the fingers out over the perinæum and inserting the thumb into the child's mouth in such a manner as to have it rest on the alveolar arch of the upper jaw. The hand thus has perfect control of the head, the thumb holding it back forcibly if it shows a tendency to advance faster than the elasticity of the perinæum warrants, while at the same time the outstretched fingers press the cranium forward against the pubic arch, and thus relieve the perinæum of its tension. If the greatest circumference of the head has been expelled, the hand readily lifts the head out independently of the pains.

Since the child has its mouth and nose free, it can breathe, and, in case of need, the mucus may be swabbed from its mouth and throat with a flexible catheter; consequently there is usually no longer any occasion for haste in extracting the head. At this time there is no need of traction on the head; the abdominal muscles will drive it out, or it may be lifted through the vulva with the hand. The author thinks his method has the advantages over Ostermann's of simplicity and ease of execution, also that of not requiring the co-operation of the nurse or other assistant. He recommends it on the strength of a large experience.

The Buffalo Academy of Medicine.—At the annual meeting, on Tuesday evening, the 8th inst., Dr. Herman Mynter was to deliver an address on The Prognosis of Appendicitis.

MINOR PARAGRAPHS.

A RÖNTGEN-RAY EXAMINATION IN A CASE OF ASTHMA.

Dr. Lewy-Dorn (*Berliner klinische Wochenschrift,* 1896, No. 47; *Deutsche Medizinal-Zeitung,* May 24, 1897) relates the case of a woman. twenty-eight years old, who had dry bronchitis with consecutive pulmonary emphysema and asthma, in which, on account of the state of the lungs, a satisfactory examination as to the size of the neighboring organs could not be made in the ordinary way. The Röntgen rays were therefore employed, and during the examination an asthmatic attack occurred, but it did not interfere with the observation. The left half of the diaphragm was observed to fall rapidly and rise slowly at each respiration, while the right half of the muscle was altogether motionless. This spectacle continued for several minutes, during which time the peculiar rough breathing could be heard distinctly. Then the patient began to cough, and the right as well as the left half of the diaphragm made deep inspiratory and expiratory movements; thick mucus was expelled and the attack was over. The case, therefore, was one of unilateral asthma, and this the author connects with the fact that the bronchial trouble was confined to one lung.

ITEMS.

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general :

Small-pox—United States.

Boston, Mass	May 20–29	1 case.	
Pensacola, Fla.	May 15–22	3 cases of varioloid.	
St. Louis, Mo.	May 15–29		1 death.

Small-pox—Foreign.

Aden, Arabia	April 16–23	28 cases,	1 death.
Alexandria, Egypt	April 15–24		4 deaths.
Bombay, India	April 20–27		1 death.
Cairo, Egypt	April 16–29		7 deaths.
Cardenas, Cuba	May 8–22	17 “	6 “
Matanzas, Cuba	May 12–26		4 “
Colombo, Ceylon	April 10–17		1 death.
Pernambuco, Brazil	Feb. 28–March 27		40 deaths.
Hong Kong, China	April 3–17		14 “
Glasgow, Scotland	May 8–15	1 case.	
London, England	April 25–May 1	12 cases.	
“ “	May 8–15	15 “	
Moscow, Russia	April 25–May 1	1 case,	2 deaths.
Gibraltar	May 9–16	2 cases.	
Nagasaki, Japan	April 19–26	20 “	2 “
Odessa, Russia	May 1–15	17 “	2 “
Osaka and Hiogo, Japan	April 17–May 1	12 “	4 “
Rio Grande do Sul, Nie	Feb. 29–March 27	16 “	3 “
Sagua la Grande, Cuba	May 8–22	32 “	
St. Petersburg, Russia	May 1–15	32 “	5 “
Trieste, Austria	May 1–15	2 “	1 death.
Warsaw, Russia	April 17–May 8		9 deaths.
Yokohama, Japan	April 1–15	18 “	5 “
Habana, Cuba	May 20–27	40 “	5 “

Cholera.

Bombay, India	April 20–27		4 deaths.

Yellow Fever.

Cardenas, Cuba	May 8–22	14 cases,	5 deaths.
Cienfuegos, Cuba	May 17–23		1 death.
Rio de Janeiro, Brazil	April 25–May 1	10 “	10 deaths.
Sagua la Grande, Cuba	May 8–22	47 “	
Habana, Cuba	May 20–27	75 “	19 “
Matanzas, Cuba	May 12–19		1 death.
Santiago de Cuba	May 8–15		2 deaths.

Plague.

Bombay, India	April 20–27		195 deaths.
Formosa, Japan	April 20–27	83 cases.	
Taihoku, Japan	April 20–27	3 "	

Leprosy—United States.

Pensacola, Fla.	May 1–31		1 death.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 31 to June 5, 1897:*

Corson, Joseph K., Major and Surgeon, Fort D. A. Russell, Wyoming, is granted leave of absence for one month, to take effect on or about June 15, 1897.

Society Meetings for the Coming Week:

Monday, *June 14th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Science (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Gynæcological Society of Boston; Burlington, Vermont, Medical and Surgical Club; Norwalk, Connecticut, Medical Society (private).

Tuesday, *June 15th:* Colorado State Medical Society (first day—Denver); New York Academy of Medicine (Section in General Medicine); New York Odontological Society; Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; Baltimore Academy of Medicine.

Wednesday, *June 16th:* Colorado State Medical Society (second day); Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *June 17th:* Minnesota State Medical Society (first day—Mankato); Colorado State Medical Society (third day); New York Academy of Medicine; Brooklyn Surgical Society; College of Physicians of Philadelphia (Section in Gynæcology); New Bedford, Massachusetts, Society for Medical Improvement (private).

Friday, *June 18th:* Minnesota State Medical Society (second day); New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Saturday, *June 19th:* Minnesota State Medical Society (third day).

Births, Marriages, and Deaths.

Married.

Brodhead—Clark.—In New York, on Wednesday, June 2d, Dr. George L. Brodhead and Miss Louise Clark.

Hunt—Bargy.—In Frankfort, N. Y., on Wednesday, June 2d, Dr. Ward E. Hunt and Miss Annie Belle Bargy.

Lide—Lowman.—In Orangeburg, South Carolina, on Wednesday, June 2d, Mr. Robert Lide and Miss Ethel Mildred Lowman, daughter of Dr. J. Walter Lowman.

McFadden—Stivers.—In Paterson, N. J., on Wednesday, June 2d, Dr. George Howard McFadden, of Hackensack, N. J., and Miss Martha Wilcox Stivers.

Palmer—Strong.—In Saratoga, N. Y., on Tuesday, June 8th, Dr. Elliott A. Palmer and Miss Emma C. Strong, daughter of Dr. Sylvester E. Strong.

Parkes—Miller.—In Chicago, on Thursday, June 3d, Dr. W. R. Parkes and Miss Emily Miller.

Sabatier—Gayle.—In New Iberia, Louisiana, on Tuesday, June 1st, Dr. George J. Sabatier and Miss Augusta Gayle.

Sarpell—Land.—In Shreveport, Louisiana, on Tuesday, June 1st, Dr. Thomas S. Sarpell, of Homer, Louisiana, and Miss Nellie M. Land.

Stewart — Ornstein.—In New York, on Saturday, June 5th, Dr. Charles W. Stewart, of Newport, Rhode Island, and Miss Elsa Ornstein.

Died.

Aldrich.—In Warrensburg, N. Y., on Friday, June 4th, Dr. William D. Aldrich, in the forty-seventh year of his age.

Benham.—In Honeoye Falls, N. Y., on Monday, May 31st, Dr. Benjamin H. Benham, in the seventy-fourth year of his age.

Heath.—In Richmond, Kentucky, on Saturday, June 5th, Mr. Chappel E. Heath, son of Dr. M. Chappel Heath.

Keeler.—In Little Falls, N. J., on Tuesday, June 8th. Dr. Edgar A. Keeler.

Strange.—In Toronto, Canada, on Saturday, June 5th, Dr. W. H. Strange, Deputy Surgeon General of the Dominion of Canada.

Thomas.—In New York, on Saturday, June 5th, Howard Lapsley Thomas, son of Dr. T. Gaillard Thomas.

Turner.—In Newport, Rhode Island, on Wednesday, June 2d, Dr. Henry E. Turner, in the eighty-first year of his age.

Miscellany.

Arsenical Poisoning.—This is the subject of an inaugural thesis by M. Georges Brouardel, a review of which is published in the *Presse médicale* for May 19th. The author insists first of all, says the writer, on the extreme difficulty of determining or stating precisely the fatal dose of arsenious acid. Investigations which have been undertaken in this direction have proved unsatisfactory, owing to the impossibility of knowing exactly the toxic dose absorbed, and to the biological resistance, which varies according to the individual, the species, and the place of entrance of the poison; the latter is of great importance in arsenical poisoning, for the question of the region constitutes in the species a many-sided problem. It concerns not only the organism taken as a whole, but also, and above all, the organs and the tissues taken separately.

M. Brouardel's researches also establish the fact that this idiosyncrasy seems to be partly connected with the species, the age, the permeability of the emunctories, the individual coefficient of toxicity, and partly the peculiar susceptibility of the organs (organic heredity). It is true that in cases of acute poisoning the preceding considerations are scarcely to be taken into account.

The author has been able to establish experimentally the minimum amount which is almost absolutely fatal in a single dose. In cases of chronic poisoning the facts above mentioned resume all their force. The variability according to the species is demonstrated by a simple experiment; for instance, arsenic is more toxic to rabbits than to guinea-pigs.

In a question of this kind the acquirement of toleration should be studied, and the author instituted a series of experiments in this direction, and employed two methods of penetration, subcutaneous and internal, and methodically varied the mode of administration of the poison. M. Brouardel found that the frequent use of medium doses repeated every three or six days for a long time accustomed only the guinea-pigs to the fatal amount; two of these animals had tolerated a dose of three milligrammes of a five-per-cent. solution—that is, a quantity slightly superior to the fatal dose; these doses were administered by the same mode. All the others, including guinea-pigs which received subcutaneously doses corresponding to the preceding one, did not present any degree of tolerance; they succumbed to doses which were inferior or equal to the minimum fatal quantity.

With regard to arsenical paralysis, which the author studied clinically, it was never manifested experimentally after the absorption of a single dose, as has been observed in certain forms of paralysis in man. This, says the writer, is interesting from a pathological point of view. M. Brouardel was not able to find any lesion in the peripheral nerves of the limbs attacked or in the spinal cord. M. Gombault, who examined the peripheral nerves and the spinal cord of a rabbit which had been poisoned and was paralyzed, confirmed this anatomopathological result, which was negative in every respect. Due also to the paralysis was the falling out of the hair which was constantly observed in the animals experimented upon; then followed thickening of the skin and spontaneous and progressive amputation of a limb, all constituting a complete series of trophic troubles.

The clinical portion of the work which the author devotes to the study of poisoning and of its different aspects is most complete and instructive. The author passes in review successively criminal, accidental, and occupation poisoning; he describes afterward the symptomatic representations of acute and chronic poisoning and devotes some space to a comprehensive article on the troubles of the cutaneous system, the lesions of which are variable, because it is not the arsenic, but the poisoning, which causes the eruption. To this individual ætiology M. Brouardel adds, as effective factors, the immediate contact of the arsenic, whether external or internal, the condition of the other emunctories, and the duration of the cutaneous elimination; in fact, the author has constantly found arsenic in the skin, the hair, and the nails of poisoned subjects.

The Diagnosis of the Acute Exanthemata, with Special Reference to Scarlet Fever.—The *Boston Medical and Surgical Journal* for May 27th contains a lecture on this subject which was recently delivered by Dr. T. M. Rotch at the Bellevue Hospital Medical College, New York, of which the following is the substance: The exanthemata comprise five diseases, variola (small-pox), varicella (chicken-pox), measles (rubeola), rubella (German measles, Rötheln), and scarlet fever. This group of diseases is characterized, says the author, by certain conditions common to all. They run a definite course and are self-limited. Each member of the group is supposed to have its own special micro-organism which produces it, but as yet none of them have been discovered. The author divides the course of all these diseases, from the time when infection takes place up to the appearance of their later manifestations, into four distinct stages: The stage of incubation, the prodromal stage, the stage of efflorescence, and the stage of desquamation. Dr. Rotch gives a table showing how the different stages vary according to the member of the group, and briefly refers to its contents as follows: The length of the stage of incubation in variola is about twelve days, in varicella about seventeen days, in measles about ten days, in rubella about twenty-one days, and in scarlet fever about four days. The characteristic prodromes of variola are three days in length, and in infants are commonly represented by convulsions, quick pulse, etc.; in varicella they last only a few hours, and show only slight malaise; in measles they are three days in length, with heightened temperature, cough, coryza, and lacrymation; in rubella they last only a few hours, with slightly heightened temperature and malaise; and in scarlet fever they are one or two days in length, and are accompanied by apathy, nausea, vomiting, sore throat, and high temperature. There is also a peculiar range of temperature characteristic of each disease.

The stage of efflorescence, says Dr. Rotch, in variola consists of macules, papules, vesicles, and pustules, all developing one from the other in slow progression. In varicella, vesicles develop so rapidly from macules and papules that the lesion is termed essentially vesicular. In measles there are papules, in rubella there are papules, and in scarlet fever there is a punctate erythema.

A very important point, he says, which is often of great aid in the diagnosis of a doubtful case, is the distribution on the skin characteristic of each of these diseases. In variola the efflorescence is most apt to begin on the forehead; in varicella on the face, behind the ears, and on the back; in measles on the face; in rubella on the face and thorax, being rather irregular in its distribution; while in scarlet fever it first appears on the neck and thorax.

Regarding desquamation, in variola it shows in large crusts, in varicella in small crusts, in measles in a fine furfuraceous mealy condition of the skin, and in scarlet fever there is a lamellar desquamation often amounting to the shedding of large strips of skin. Rubella, as a rule, shows no desquamation.

The complications and sequelæ of the different members of this group differ according to the disease. Those, says Dr. Rotch, which are to be particularly feared are, in variola an invasion of the larynx and the lungs; in measles involvement of the eye or the lung and a tendency to general tuberculosis; and in scarlet fever an affection of the kidney, the ear, and the heart. In varicella and rubella there is nothing special.

Scarlet fever, he continues, is the most irregular of all the exanthemata in its virulence and in the manifestations which it presents in different individuals. The skin appears to be the chief vehicle of the contagion, which has a wonderful tenacity for clothing and other articles, and may be capable of reproducing the disease for many months. In contradistinction to measles, which is known to be highly infectious in the early stage, scarlet fever appears to be most infectious in the later stages, and the contagium is most likely to be disseminated during the stage of desquamation.

The diagnosis from measles in the prodromal stage by the appearance of the throat is as follows: In scarlet fever there is a general intense redness of the whole throat, including the hard palate. The entire mucous membrane is affected, and the small dots, which in connection with the hyperæmic condition of the skin represent the condition of a punctate erythema, from being localized on the moistened mucous membrane, have a little darker appearance than the adjacent reddened tissue. In measles, on the contrary, the mucous membrane of the throat has a blotchy appearance and is of a darker red than is seen in scarlet fever, while the mucous membrane between these blotches is but slightly congested in comparison with that of scarlet fever.

The chief sequela, and the only one which is at all common, says Dr. Rotch, is nephritis. Cardiac disease, commonly secondary to the nephritis, may occur. Lesions of the other organs are unusual, and have no direct connection with the scarlet fever. They are due partly to the fever and partly to the septic processes which have arisen in the course of the disease, and are represented, as would naturally be expected, by a congested condition of the various internal organs, and by the usual changes which are found in pleuritis, pericarditis, endocarditis, and meningitis.

Scarlet fever may begin with such great cerebral excitement as to lead the physician to suspect meningitis, and it may not be possible to make a diagnosis until the efflorescence has appeared, which may not be until even the eighth or ninth day.

Most of the complications which arise in scarlet fever are due probably to the action of streptococci, either isolated or associated with other micro-organisms. These micro-organisms produce serious symptoms, which are often followed by death, either directly by giving rise to septicæmic processes or indirectly by nephritis.

Dr. Rotch states that the earlier in the course of the disease the symptoms of nephritis appear, the severer, as a rule, will be its type. The extent of the albuminuria is of less consequence, he says, than the total quantity of the urine. A rapid and extensive diminution of the urine is ominous, as it indicates the accumulation of nitrogenous waste in the blood and the danger of a resulting uræmia. The albumin occurring early in the disease is more apt to be in large quantities than when it appears first in the third or fourth week. Hæmaturia is frequently present in this form of nephritis, but ordinarily of itself adds little to the gravity of the disease. The œdema of the face may be followed by a rapid involvement of the ankles and legs, and at times it may become general. During the course of a general œdema the desquamation is apt to cease and to return on its disappearance. The œdema may last for months or may pass away quickly; it may be entirely absent, but in such cases the nephritis is almost invariably of a light grade.

At times, says the author, during the presence of a general œdema, serous effusions into the pleura may occur. Œdema of the lungs and brain, though very rare, may also take place. Instead of a slow development beginning with œdema of the face, there may be an acute attack, ushered in by fever, vomiting, headache, œdema, amblyopia, coma, and convulsions.

Relapses may occur many weeks after an attack of scarlatinal nephritis, and the case should be watched with the greatest care for several months. The nephritis of scarlet fever, although it may last for months, has a tendency to ultimate recovery in children, on account of their wonderful recuperative powers. It is also rare for the renal disease following scarlet fever to become chronic.

Retinitis and amaurosis at times occur during the progress of the nephritis in scarlet fever. Dr. Rotch states that in these cases of amaurosis it has been noticed that, although the loss of sight may be complete, almost always where uræmia and amaurosis are coincident, there is found no perceptible change in the retina, no congestion of the papillæ, no increase of intracranial pressure, and no intense œdema of the brain. The sight under these circumstances may be recovered completely.

Concerning the use of diuretics, continues Dr. Rotch, only those should be used which do not irritate the kidney. Acetate of potassium is one of the safer diuretics in this complication. In severe cases, with general œdema and threatening uræmia, cathartics are rather more certain in their action than diaphoretics and diuretics, and are especially indicated where, as is usually the case, constipation is present. Podophyllin in doses of one tenth of a grain may be given to a child five years old, and be repeated a number of times. It usually acts quickly. The compound jalap powder, in doses of from five to ten grains, may also be given where a rapid and decided derivation by the intestine is indicated.

Having provided for the proper movement of the bowels, the author goes on to say, if the skin is hot and dry and uræmic symptoms (usually represented by anuria, somnolence, amblyopia, and headache) are present, we may resort to the hot pack, either wet or dry. He prefers in these cases to have the child wrapped in a blanket and placed directly in a tub containing water at a temperature of from 105° to 110° F. The child should be kept in the water fifteen or twenty minutes, or even longer if necessary, and should then be taken from the wet blanket, enveloped in hot, dry blankets, and kept in them until the skin has become moist and reaction has taken place. While the child is in the bath milk may be given to it, and stimulants if they are indicated by a weak or an intermittent pulse.

In addition to this treatment, hydrochloride of pilocarpine in doses of one twentieth of a grain should be given by the mouth to a child of two years, and subcutaneously if desired to a child five years of age. In these cases of threatened uræmia convulsions sometimes appear quite suddenly. Under these circumstances enemata of hydrate of chloral, from five to ten grains dissolved in water, are of value in controlling the nervous phenomena. The author prefers, however, to use a combination of bromide of potassium and hydrate of chloral.

Dr. Rotch states that where the ascites is extreme, paracentesis abdominis is often of great value not only in relieving the pressure, but also in increasing the action of the diuretic, which perhaps before was not acting freely. Digitalis is a valuable remedy especially adapted to the treatment of the nephritis of scarlet fever and to that of the cardiac changes which result from it. By the administration of this drug the flow of urine is increased. It is best given, he says, in the form of a freshly prepared infusion, in teaspoonful doses every four hours, to a child five years old. Diuretin, five grains dissolved in water and given two or three times in the twenty-four hours, has proved of considerable value in his cases, and is apparently harmless. Nitroglycerin is valuable where the action of the heart suddenly becomes feeble and irregular.

The "Boiled Hand" in Surgery.—In the *Centralblatt für Chirurgie* for May 22d Dr. W. Zoege von Manteuffel, of Dorpat, argues in favor of the use of rubber gloves in surgical work. The disinfection of the surgeon's hands, he says, is still an unsolved problem, in spite of all the practical results of the surgery of the present day which would seem to show the contrary. We are not yet in a position to disinfect our hands to such an extent that the disinfection will bear close critical tests under all circumstances. This we may learn from Kümmell's, Fürbringer's, Sänger's, and Reinecke's experiments, from von Bergmann's demonstrations at the last international congress but one, and from the recent investigations of Lauenstein and others. We may secure a relative, but not an absolute, freedom from germs, and we must always take into account the variable degree to which the vital properties of the tissues of the person operated on are called upon to correct the faulty disinfection of our hands, however slight the faultiness may be. In general, therefore, we accomplish the desired result, but we do not secure absolute freedom of the hands from germs when we have touched infectious materials or dipped the hands in fæcal matter or pus.

In consequence of the very variegated material that he has had to deal with in the Dorpat City Hospital, and the necessity of operating promiscuously upon uninfected and septic patients, of opening abscesses and then dressing wounds, Dr. von Manteuffel has come to the practice of protecting his hands against infection by the use of boiled rubber gloves. One can get along well enough without this device, he says, if he has a great number of trained assistants, but even after repeated washings—nay, on the following day, too, in the case of an operation on a very septic person—he can not rid himself of the uncomfortable feeling that his hands are not quite right, although at present he can soon do away with the unpleasant odor which formerly, when the use of alcohol as a disinfectant was not yet understood, clung to the hands for an extraordinary length of time.

The author says that he soon came to recognize an additional advantage of the gloves. He himself does not suffer with furuncles, but one of his assistants had to struggle with operative boils continually, and in this task the gloves were found of great value. Finally, the usefulness of the boiled gloves was illustrated most strikingly when wounded persons requiring immediate aid were brought in, and five minutes spent in disinfecting the hands meant a serious loss of time. The first plugging of a wound involving the internal mammary artery, he remarks, may be done with the gloves on, and thus time be gained for careful disinfection. The same is true in regard to various severe abdominal wounds.

At present he uses the gloves in operations on septic subjects; in operations on clean wounds the treatment of which does not admit of postponement, provided he has had to deal with anything septic; in case he has any wound, furuncle, or the like, on his hand; and in sudden emergencies. By operations that can not be postponed he does not understand merely kelotomy, tracheotomy, etc., short operations that in themselves can not be deferred; there are often extraneous circumstances that demand the performance of an operation at a certain time, just the time when the surgeon has on his hand, for example, a lesion that does not admit of its disinfection.

In all such cases as he has mentioned it is, in the author's opinion, not always—he would rather say never—possible to disinfect the hands adequately. One may console himself, in the case of a person brought in with an injury just received, that of two evils he is choosing the lesser, that above all else the immediate danger must be met; but after the operation, done with an infected or diseased hand, one will have the memory on his conscience either of something no worse than a suppurating fistula or of general septic infection.

Of course, says Dr. von Manteuffel, it is somewhat awkward to operate with gloves on. In septic cases this is not of very great consequence, for in them there are generally no technical difficulties. It is different, however, when we cover the infected or wounded hand, insusceptible of disinfection, with the rubber glove and undertake an aseptic operation. If the glove fits close, the hand becomes anæmic and is soon fatigued. The gloves in the market have another defect; there is no expansion for the ball of the thumb, so that it is difficult to abduct that digit. Moreover, if the fingers are too long, they impede the nimble handling of instruments, especially those having the form of scissors. But even with well-fitting gloves, to some extent furnished to measure, the operation will probably be somewhat prolonged. But what is this, asks the author, compared to the absolute reliability of the "boiled hand"? Finally, so far as rapidity is concerned, even major operations, he says, may be done without noteworthy loss of time. Besides septic operations, he has used the gloves in a Bassini's operation for the radical cure of hernia, in two cases of radical operation for umbilical hernia, in a radical operation for inguinal hernia in the female, and in a resection of the elbow joint by means of a radical incision. Perhaps, he says, these operations lasted from five to ten minutes longer than usual, but he is not yet thoroughly accustomed to the gloves and has none that fit well.

Of course, he adds, he considers it incumbent on him to disinfect his hands first, so far as the circumstances of the case may permit of it, so that, in the event of the glove being nicked, at least no wholly disinfected skin shall be exposed; this, indeed, is required for the mere drawing on of the gloves, although a sterilized glove may be used for that purpose. He has the sleeve of his operating gown close about the wrist, or at least reaching down as far as that, and the arm disinfected to the elbow. Thus far, he has used gloves somewhat longer than those employed by chemists, reaching up so as to inclose the wristband.

Recently he has used the rubber glove, or at least a rubber finger-stall, in examinations per anum, provided no fine detail had to be made out, and it is astonishing, he says, how little it interferes with palpation if it fits snug. On the whole, he recommends boiled rubber gloves as a very useful article for the operating room. Moreover, he says, they must be particularly useful in country practice, carried about in a glass receptacle, for disinfection of the hands in a farmhouse is almost always defective.

Proposed Antivivisection Legislation affecting the District of Columbia.—The following is the text of Senate bill No. 1063, reported favorably to the Senate on May 13, 1897, by the committee on the District of Columbia. It is similar in its provisions to Senate bill No. 1552 of the preceding Congress. It is entitled For the Further Prevention of Cruelty to Animals in the District of Columbia, and reads as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter no person shall perform on a living vertebrate animal any experiment calculated to give pain to such animal, except subject to the restrictions hereinafter prescribed. Any person performing or taking part in performing any experiment calculated to give pain in contravention of this act shall be guilty of an offense against this act, and shall, if it be the first offense, be liable to a penalty not exceeding one hundred and fifty dollars, and if it be the second or any subsequent offense, shall be liable, at the discretion of the court by which he is tried, to a penalty not exceeding three hundred dollars, or to imprisonment for a period not exceeding six months.

Sec. 2. That the following restrictions are imposed by this act with respect to the performance on any living vertebrate animal of an experiment calculated to give pain to such animal; that is to say:

(*a*) The experiment must be performed with a view to the advancement by new discovery of physiological knowledge, or of knowledge which will be useful for saving or prolonging life or alleviating suffering; and

(*b*) The experiment must be performed by a person holding such license from the Commissioners of the District of Columbia as in this act mentioned, or by a duly authorized officer of the government of the United States, or of the District of Columbia; and

(*c*) The animal must, during the whole of the experiment, be completely under the influence of ether or chloroform sufficiently to prevent the animal from feeling pain, excepting only that in so-called inoculation experiments or tests of drugs or medicines, the animal need not be anæsthetized nor killed afterward, nor in tests of surgical procedure need animals be kept completely anæsthetized during the process of recovery from the surgical operation. Otherwise than this the animal must be kept from pain during all experiments; and

(*d*) The animal must, if the pain is likely to continue after the effect of the anæsthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anæsthetic which has been administered; and

(*e*) No experiment shall be made upon any living creature, calculated to give pain to such creature, in any of the public schools of the District of Columbia; provided as follows, that is to say:

First. Experiments may be performed under the foregoing provisions as to the use of anæsthetics by a person giving illustrations of lectures in medical schools, hospitals, or colleges, on such certificate being given, as in this act hereafter mentioned, that the proposed experiments are absolutely necessary for the due instruction of the persons to whom such lectures are given, with a view to their acquiring physiological knowledge, or knowledge which will be useful to them for saving or prolonging life or alleviating suffering;

Second. The substance known as urari or curare shall not, for the purposes of this act, be deemed to be an anæsthetic; and

Third. Notwithstanding anything in this act contained, no experiment calculated to give pain shall be performed on a dog or cat, except upon such certificate being given, as in this act mentioned, stating, in addition to the statements hereinbefore required to be made in such certificate, that for reasons specified in the certificate the object of the experiment will be necessarily frustrated unless it is performed on an animal similar in constitution and habits to a cat or dog, and no other animal is available for such experiment; and an experiment calculated to give pain shall not be performed on any horse, ass, or mule, except on such certificate being given, as in this act mentioned, that the object of the experiment will be necessarily frustrated unless it is performed on a horse, ass, or mule, and that no other animal is available for such purpose; and

Fourth. Any exhibition to the general public, whether admission be on payment of money or gratuitous, of experiments on living animals, calculated to give pain, shall be illegal.

Any person performing or aiding in performing such experiment shall be deemed to be guilty of an offense against this act, and shall, if it be the first offense, be liable to a penalty not exceeding one hundred and fifty dollars, and if it be the second or any subsequent offense, shall be liable, at the discretion of the court by which he is tried, to a penalty not exceeding three hundred dollars, or to imprisonment not exceeding six months; and any person publishing any notice of any such intended exhibition by advertisement in a newspaper, placard, or otherwise, shall be liable to a penalty not exceeding ten dollars.

A person punished for an offense under this section shall not for the same offense be punishable under any other section of this act.

Sec. 3. That the Commissioners of the District may insert, as a condition of granting any license, a provision in such license that the place in which any such experiment is to be performed by the license is to be registered in such manner as the said commissioners may from time to time by any general or special order direct: *Provided*, That every place for the performance of experiments for the purpose of instruction shall be approved by the said commissioners, and shall be registered in such manner as the said commissioners may from time to time by any general or special order direct.

Sec. 4. That the Commissioners of the District, upon application as hereinafter prescribed, may license any person whom they may think qualified to hold a license to perform experiments under this act: *Provided only*, That a license shall not be granted to any person under the age of twenty-five years, unless he be a graduate from a medical college, duly authorized to practise medicine in the District of Columbia.

Sec. 5. That the Commissioners of the District may direct any person performing experiments under this act from time to time to make reports to them of the methods employed and the results of such experiments, in such form and with such details as the said commissioners may require.

Sec. 6. That the President of the United States shall cause all places where experiments on living vertebrate animals are carried on, in the District of Columbia, to be, from time to time, visited and inspected without previous notice, for the purpose of securing compliance with the provisions of this act; and to that end shall appoint four inspectors, who shall serve without compensation, and who shall have authority to visit and inspect the places aforesaid, and who shall report to the President of the United States from time to time the results of their observations therein, which shall be made public by him.

Sec. 7. That any application for a license under this act, and for a certificate to be given as in this act mentioned, must be signed by three physicians duly licensed to practise and actually engaged in practising medicine in the District of Columbia, and also by a professor of physiology, medicine, anatomy, medical jurisprudence, materia medica, or surgery in the medical department of any duly established reliable school or college in the District of Columbia: *Provided*, That when any person applying for a certificate under this act is himself one of the persons authorized to sign such certificate, the signature of some other of such persons shall be substituted for the signature of the applicant.

A certificate under this section may be given for such time or for such series of experiments as the persons signing the certificate may think expedient.

A copy of any certificate under this section shall be forwarded by the applicant to the Commissioners of the District, but shall not be available until one week after a copy has been so forwarded.

The Commissioners of the District may at any time disallow or suspend any certificate given under this section.

Sec. 8. That the powers conferred by this act of granting a license or giving a certificate for the performance of an experiment on living animals may be exercised by an order in writing, under the hand of any judge of a court of record having criminal jurisdiction in the District, in a case where such judge is satisfied that it is essential for the purpose of justice in a criminal case to make such experiment.

It will be remembered that several months ago the Secretary of Agriculture made a vigorous protest against the bill then pending. Now, under date of May 25, 1897, the secretary, the Hon. James Wilson, has written another protest addressed to the Hon. Redfield Proctor, chairman of the committee on agriculture and forestry of the Senate. It reads as follows:

"Dear Senator: Permit me to invite your attention to Senate bill 1063, entitled 'A bill for the further prevention of cruelty to animals in the District of Columbia,' and to the injurious effect which this bill is likely to have upon the scientific investigations of the Department of Agriculture, and of the State agricultural experiment stations. The investigation of the diseases of animals, their causes, nature, prevention, and treatment, is an extremely important work in the interests of agriculture, and one which should be fostered and encouraged. Such investigations, also, have a most valuable influence in many cases in advancing the knowledge of human diseases, but, as they are primarily intended to benefit our farmers by diminishing the losses of live stock, I will not dwell upon their effect upon human medicine.

"Congress has for many years made provision for the investigation of the diseases of animals by this department; large sums of money have been appropriated for this purpose; an experimental station and a laboratory have been equipped and maintained; valuable and expensive apparatus has been accumulated; expert investigators have been employed, and a vast amount of valuable knowledge has been acquired. This work is not conducted for the benefit of the District of Columbia any more than for other parts of the country; indeed, the stock interests of the District being insignificant, I might say that these investigations are made for the farmers of the country at large, and that the District of Columbia should neither be allowed to control nor interfere with them.

"The bill mentioned, under the guise of a local measure, undertakes to regulate these investigations, to state how they shall be performed, to prohibit certain kinds of experiments, to make experiments that do not come under the provisions of the bill an offense punishable by heavy fine and imprisonment, without regard to the necessity for the experiments or whether there is any cruelty in performing them. It also provides that the Commissioners of the District may direct any person performing such experiments from time to time to make reports to them of the methods employed and the results of such experiments, in such form and with such details as the said commissioners may require. In effect, then, the bill would take this important and necessary scientific work, which has been committed to the Department of Agriculture, and which is maintained for the relief of the great agricultural and live stock interests of the country, out of the hands of the Secretary of Agriculture, at least to a considerable extent, and place it, to that extent, under the direction and control of the officials of the District of Columbia.

"No one representing the agricultural interests of the country has urged the desirability of this measure or had an opportunity to assist in perfecting it. The antivivisection committee of the Washington Humane Society claims the authorship of the bill, and it is freely asserted that its passage is desired as much for its influence as a precedent for State legislation as for its direct effect in the District. It, therefore, threatens the work of the State agricultural experiment stations almost in the same manner as it does the work of this department. A bill having such far-reaching effects upon the greatest industries of the country should not be treated as a strictly local measure, and should be much more carefully considered than this one has been before it is enacted into law. Such a bill, if deemed necessary at all, should be drafted by persons in sympathy with scientific investigations, and should interfere with such investigations as little as possible consistent with the accomplishment of its object—viz., the prevention of cruelty. This bill, S. 1063, is the British antivivisection act, slightly modified to make it applicable to our institutions, and with important safeguards of that measure omitted. The original act may have been required in Great Britain, and may have been suitable to the conditions existing there. In the United States, however, the conditions are different; the law for the prevention of cruelty to animals in the District of Columbia is very rigorous, and is not limited to domesticated animals, as was formerly the case with the law for the prevention of cruelty to animals in Great Britain. There is consequently not the same reason for special legislation concerning scientific experiments here, and much less for a more drastic measure.

"Briefly, the objections which I would urge to the passage of this bill are as follows:

"I. It has not been shown that there have been any cruel experiments performed in the District of Columbia, or that any such experiments are now in progress, or that there are likely to be any experiments of this character in the near future.

"The only allegation of such cruelties having been perpetrated was contained in a letter from Dr. A. L. Rauterberg in reference to mutilations of a dumb animal which he had seen in the Army Medical Museum. His statement is indefinite and does not specify the time, the species of animal operated upon, or the person perpetrating the cruel act.

"The records show that Dr. Rauterberg was at one time employed in the Army Medical Museum in a clerical capacity, and that he has not been connected with that institution for twenty-three years. Responsible medical officers connected with the museum testify that there have been no painful experiments performed there since 1870, nor, so far as they are informed, previous to that time. Need I say, it would not be wise to pass legislation which may retard science and interrupt the investigations now in progress and necessary for the control of diseases costing our farmers many millions of dollars annually, upon this inconclusive evidence as to something which is alleged to have occurred in the Army Medical Museum a quarter of a century ago? If it is considered necessary to take any legislative action upon such a statement, this should certainly be preceded by a rigid public investigation to determine: (1) The truth of the allegation; (2) whether the animal was mutilated with the purpose of conducting an experiment; (3) whether the mutilation constituted cruelty; (4) whether any attempt was made to convict the party making the experiment of cruelty, and if such attempt to convict failed, what were the reasons for the failure; (5) whether in case the experiment involved cruelty and were repeated at this time the guilty party could not be convicted and punished under existing statutes.

"In considering the advisability of legislation and the character of the legislation required there should be a sharp distinction drawn between: (1) Malicious cruelty; (2) vivisections for demonstrations in the common schools before immature pupils; (3) demonstrations in the medical schools or universities necessary for the instruction of students of medicine or biology; (4) original investigations for the advancement of biological or medical science. These different acts are referred to by the advocates of this legislation without much effort to discriminate between them, but it must be evident to any one who will give the matter some thought that it is not necessary to restrict or prohibit demonstrations for the instruction of advanced scientific students, or experiments for the discovery of new facts in science, in order to prevent malicious cruelty or demonstrations in the primary schools.

"II. This bill, if enacted into law, would absolutely prohibit important and necessary lines of experiments, and would greatly restrict some others which were not prohibited.

"This statement can be confidently made from a reading of the bill, but the full extent of the injury which it would do could only be determined by experience, since all kinds of experiments which may become necessary can not be foreseen. The bill establishes certain restrictions in accordance with which experiments must be performed, and if any experiment is made which is in contravention to these provisions, or any of them, the investigator is 'guilty of an offense against this act' and liable to a penalty of a hundred and fifty dollars, if a first offense, or if a second offense the penalty may be three hundred dollars, or six months' imprisonment.

"Senator Gallinger's report (S. No. 116) accompanying this bill refers to the memorials and resolutions of prominent scientific bodies, protesting against its passage, as erroneous and misleading in asserting that the bill is intended to restrict and prohibit experiments upon living animals. There appears to be a difference of opinion as to the effect which the bill is intended to have, but an examination of its several sections shows conclusively that those who favor it need to make themselves familiar with its provisions not less than those who oppose it. For instance, the report says:

"'It is proper also to say that the greater part of these adverse statements concern bacteriology only, which is expressly excluded from the operation of the bill, and therefore beside the question.' I fail to find any such exclusion of bacteriology in the bill as reported from the committee. The only exception to which this statement could possibly refer is found in section 2, paragraph (*c*), where it is provided that in 'so-called inoculation experiments or tests of drugs or medicines the animal need not be anæsthetized nor killed afterward, nor in tests of surgical procedure need animals be kept completely anæsthetized during the process of recovery from the surgical operation.' As it would be impossible to keep an animal anæsthetized during the whole time of an inoculation experiment, the duration of which may vary from one to thirty days, or even longer, the effect of this exception is to avoid a complete prohibition of this class of experiments, and to allow them to be made subject to all the other provisions of the bill.

"The first restriction is that 'the experiment must be performed with a view to the advancement by new discovery of physiological knowledge, or of knowledge which will be useful for saving or prolonging life or alleviating suffering.' Dr. Charles W. Dabney, Jr., acting Secretary of Agriculture, held, in a letter to the chairman of the committee, that this provision forbids all experimentation to confirm the results obtained by others, or to determine whether their results are exactly accurate, or whether such conclusions apply under the conditions which obtain in this country. If this view should prove to be correct, and it appears to be in strict accordance with the text of the bill, it would prohibit a large part of the experimental work of the department, bacteriology included, and seriously cripple the remainder. The report (No. 116) states that 'the bill does not bear this limited construction,' but it is difficult to see how a court could otherwise construe this plain and explicit language.

"Those who drafted the British law were evidently of the opinion that the courts would strictly construe this paragraph, for they inserted the following exception:

"'Experiments may be performed not directly for the advancement by new discovery of physiological knowledge, or of knowledge which will be useful for saving or prolonging life or alleviating suffering, but for the purpose of testing a particular former discovery alleged to have been made for the advancement of such knowledge as last aforesaid, on such certificate being given, as is in this act mentioned, that such testing is absolutely necessary for the effectual advancement of such knowledge.'

"For some unexplained reason the antivivisection committee of the Washington Humane Society omitted this paragraph when they drafted S. 1063, and consequently this safeguard does not appear in the bill now pending in the United States Senate.

"It is not my purpose to analyze the entire bill, nor is this necessary to show that it is fatally defective in its present form. Let us return to paragraph (*c*), section 2. 'The animal must, during the whole of the experiment, be completely under the influence of ether or chloroform sufficiently to prevent the animal from feeling pain, excepting only that in so-called inoculation experiments or tests of drugs or medicines, the animal need not be anæsthetized nor killed afterward, nor in tests of surgical procedure need animals be kept completely anæsthetized during the process of recovery from the surgical operation. Otherwise than this the animal must be kept from pain during all experiments.' There is a very simple, very common, and very necessary line of experiments made to determine whether an animal contracts or may contract a certain disease through certain articles of diet. For instance, we wish to determine whether a calf or a pig will contract tuberculosis by eating infected milk which has passed through a separator, or whether hog cholera may be spread by the separator milk from creameries. The only way to determine this is to feed infected milk which has been passed through a separator. But if the animal contracts one of these diseases in that way it will probably become fatally affected; it will probably suffer pain. As this is not an inoculation experiment, it contravenes the provisions of the bill unless the animals are kept under anæsthetics during the whole course of the experiment, which would be absurd and impossible.

"Again, we wish to determine whether susceptible cattle will contract Texas fever when separated from infected ones by an ordinary board fence. It has been held by some that this is impossible, but others hold the opposite view. It is important to test the question by actual experiment. Here, again, we should contravene the provisions of the bill, because, if the animals contracted the disease, they would suffer pain, and, as it is not a 'so-called inoculation experiment,' it would be necessary according to the bill to keep the animals completely anæsthetized during the whole course of the experiment. Such a proceeding would be as impossible in this case as in the other.

"Take another case, such as it is frequently necessary for the department to decide by accurate experiments. We wish to know whether the contagion of a disease like bovine pleuro-pneumonia may be contracted from stables, or whether it must always pass direct from animal to animal through the expired air. To determine this, animals must be confined in stables where diseased cattle have been. If they contract the disease they necessarily suffer pain, hence, as it is not an inoculation experiment, or a test of drugs or medicines or a surgical procedure, the animal must be kept for weeks under ether or chloroform, which again would be absurd and impossible.

"A fourth case may arise as follows: There is a serious outbreak of an apparently contagious disease among horses in a Western State. The State veterinarian being in doubt as to its nature sends some blood or a piece of affected tissue to the department, and asks for an investigation and an early report to guide him in the measures that should be adopted for the suppression of the outbreak. An inoculation experiment is found to be necessary, and a horse must be used. Before this inoculation can be made a certificate must be given that the object of the experiment will necessarily be frustrated unless it is performed on a horse, ass, or mule, and that no other animal is available for this purpose. The application for this certificate must be signed by three physicians duly licensed to practise and actually engaged in practising medicine in the District of Columbia, and also by a professor of physiology, medicine, anatomy, medical jurisprudence, materia medica, or surgery in the medical department of a duly established reliable school or college in the District of Columbia. After this application is forwarded to the Commissioners of the District it does not become available until a period of one week has elapsed. During this time the material sent for examination has putrefied and the investigation can not be made. And yet we are told by the senator that 'the bill under consideration does not interfere in the least with inoculation experiments.'

"These are simple, everyday cases of experiments which would be prohibited by this bill. Many others could be instanced, but it is not necessary. I have said enough to show that the bill will restrict, and in many cases it will actually prohibit, very important investigations.

"III. This legislation is unanimously opposed by the great scientific bodies of the United States.

"The bill under consideration is felt by scientific men to be such a blow at freedom of research, such an obstruction to the advancement of biology, medicine, and the allied sciences, that all of the great scientific bodies of the country have protested against it. Among these may be mentioned, as having most weight, the National Academy of Sciences, the American Association for the Advancement of Science, the Society for the Promotion of Agricultural Science, the American Medical Association, the Association of American Physicians, the American Academy of Medicine, the American Surgical Association, the Association of American Medical Colleges, the American Microscopical Society, the United States Veterinary Medical Association, the American Public Health Association, the American Society of Naturalists, the American Society of Morphologists. In addition to these, numerous State medical associations, State boards of health, State academies of natural sciences, and the faculties of educational institutions have joined in this protest. The united voice of these great and conservative organizations can not be safely ignored or disregarded.

"The report accompanying the bill assumes that these protests were made without an examination of the bill, and without an understanding of its effects upon research. This assumption is based upon the statement in the protests that the bill would restrict, prevent, and prohibit experimentation upon animals in the District of Columbia, whereas, according to Senator Gallinger, it would not have that effect. The organizations mentioned, which include most if not all of the investigators of the country, may be considered as having acted intelligently and to be better judges of such legislation than persons who have had no experience in scientific research. Besides, it has already been shown in this communication that the provisions of the bill do restrict this class of experiments, and absolutely prevent and prohibit many lines of work. The assumption that these learned bodies protested without an investigation and without a knowledge of the bill can not be accepted.

"IV. This bill would discourage and injure the investigations of this department by placing the experts under the espionage of inspectors not connected with the department, by requiring reports to be made in detail to the Commissioners of the District of Columbia, by imposing heavy penalties for any experiment which varies in any way from the lines laid down in the bill.

"Espionage by inspectors unacquainted with the purposes or necessities of original scientific work in any field can not be agreeable to the expert; and if the inspectors should be unfriendly, officious, and inclined to search for slight departures from the terms of the bill or to misconstrue the experiments, it would become simply intolerable. It may be assumed that the President would make a wise selection of inspectors; but no doubt the originators of the bill, the antivivisection committee of the local humane society, would expect to be represented, and might secure representation. In that case would not their antivivisection principles compel them to obstruct, harass, and prevent experimentations upon animals to the full extent of their power? Could we reasonably expect any other course?

"By frequent visits of the inspectors, or any of them, by prolonged investigations of the laboratories, and continuously asking for explanations, by repeatedly calling through the commissioners for detailed reports of all experiments, the experimental work of the department might be interrupted and prevented at any time, notwithstanding the instructions of the Secretary of Agriculture and his desire to speedily accomplish some particular plan for the benefit of the agricultural interests. An experiment necessary to decide some important question connected with our export cattle trade and to save that trade from destruction by foreign prohibition might thus be stopped, or an experiment to at once determine the nature of an imported contagion, such as rinderpest, threatening with disaster the whole animal industry of the country, might be delayed until the contagion had extended beyond control.

"Again, it is undesirable to divide the authority over the employees of this department between the Secretary of Agriculture and the Commissioners of the District of Columbia. Should this bill become a law, the Secretary of Agriculture might order an immediate investigation of some important subject, but the Commissioners of the District of Columbia could arrest and delay this investigation by calling for detailed reports upon work in progress or which had previously been performed. They might at any time prevent or stop certain classes of investigations by disallowing or suspending the required certificate as provided in section 7. Such a condition of affairs would be unprecedented, and destructive to discipline and effective work.

"We could only expect that the experts employed by this department would endeavor to obey the law and conduct the experiments in accordance with its provisions in order to avoid the penalties. If there was any doubt as to the legality, the experiments would not be made. Many tests which would otherwise be made would be avoided and the results of the investigations would to that extent be inconclusive and unreliable. Who would suffer from these deficiencies? Not the expert, for his salary would continue unimpaired. Would not all the delays, all the deficiencies, all the prohibition of work be so much withdrawn from the people of the United States and particularly from the farming community? If experiments upon animals are conducted by this department, it is because the country needs the knowledge obtained in that way, and because Congress has directed that such investigations should be made.

"V. It has not been shown that existing law is insufficient to prevent any form of cruelty.

"The report accompanying the bill refers to a proposed visit to this country of Professor Mantagazza and says:

"Suppose him to visit Washington, and to offer to repeat, for instruction of young 'experts' in government laboratories, that series of experiments in causation of pain which made him famous—or infamous—wherever his name is known. Should he be permitted to do so? . . . But those who advocate this bill do not, and will not, admit that even the eminence or the qualifications of Mantagazza justify him in experiments such as he has made. Even a man of science must not overstep the boundaries that separate right from wrong. It is not to be believed that the possession of a degree in science should confer upon any young enthusiast the right to torture animals after the example of Mantagazza or others like him, and especially should they not be permitted to do this in laboratories supported by taxation of the people of the United States, free from inspection or criticism, free from accountability to public opinion, free from the control or supervision of representatives of the National Government other than those who are officers of the particular department under which the experimenter is employed.

"A cursory examination of existing law shows that such experiments as are related in detail in the report are already prohibited, and violations of the law may be followed with as severe penalties as are provided in S. 1063. Only *properly conducted* scientific experiments under *proper authority* are now allowed. Provision is also made for the issuance of a search warrant upon complaint by any member of the Association for the Prevention of Cruelty to Animals who believes and has reasonable cause to believe that the laws in relation to cruelty to animals have been or are being violated in any particular building or place. I quote certain sections of the Compiled Statutes, D. C. (chapter 67), in relation to the Washington Humane Society to show the complete authority which has already been enacted for preventing cruelty in any form:

"Sec. 5. Whoever overdrives, overloads, drives when overloaded, overworks, tortures, torments, deprives of necessary sustenance, cruelly beats, mutilates, or cruelly kills, or causes or procures to be so overdriven, overloaded, driven when overloaded, overworked, tortured, tormented, deprived of necessary sustenance, cruelly beaten, mutilated, or cruelly kills any animal, and whoever, having the charge or custody of any animal, either as owner or otherwise, inflicts unnecessary cruelty upon the same, or unnecessarily fails to provide the same with proper food, drink, shelter, or protection from the weather, shall for every such offense be punished by imprisonment in jail not exceeding one year, or by fine not exceeding two hundred and fifty dollars, or by both such fine and imprisonment.

"Sec. 6. Every owner, possessor, or person having the charge or custody of any animal, who cruelly drives or works the same when unfit for labor, or cruelly abandons the same, or who carries the same, or causes the same to be carried, in or upon any vehicle or otherwise, in an unnecessarily cruel or inhuman manner, or knowingly and willfully authorizes or permits the same to be subjected to unnecessary torture, suffering, or cruelty of any kind, shall be punished for every such offense in the manner provided in section one. [Sec. 5 of this act.]

"Sec. 9. When complaint is made by any member of the Association for the Prevention of Cruelty to Animals (Washington Humane Society), on oath or affirmation, to any magistrate authorized to issue warrants in criminal cases, that the complainant believes, and has reasonable cause to believe, that the laws in relation to cruelty to animals have been or are being violated in any particular building or place, such magistrate, if satisfied that there is reasonable cause for such belief, shall issue a search warrant, authorizing any marshal, deputy marshal, constable, police officer, or any member of the Association for the Prevention of Cruelty to Animals, to search such building or place.

"Sec. 15. Nothing in this act contained shall be construed to prohibit or interfere with any properly conducted scientific experiments or investigations, which experiments shall be performed only under the authority of the faculty of some regularly incorporated medical college, university, or scientific society.

"Sec. 16. In this act the word 'animal' or 'animals' shall be held to include all brute creatures, and the words 'owner,' 'persons,' and 'whoever,' shall be held to include corporations as well as individuals; and the knowledge and acts of agents of, and persons employed by, corporations in regard to animals transported, owned, or employed by, or in the custody of, such corporations shall be held to be the acts and knowledge of such corporations.

"The report assumes, page 6, that the great underlying principle for which the bill contends is the right of the government to govern the individual. So far as I can see there is no such principle at stake. The right of Congress to pass the bill is unquestioned, but whether it is desirable, proper, and for the best interests of the country to pass it is a question which should receive careful and impartial investigation. I trust that legislation which so seriously affects the whole country will not be treated as a strictly local measure, but will receive the attention of your honorable committee; that the voice of agriculture and science may be heard by the Senate, and that this objectionable bill will not become a law."

Original Communications.

THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM AND ITS CONSTITUENT NEURONES,

AS REVEALED BY RECENT INVESTIGATIONS.

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II.

THE NEURONE AS A MORPHOLOGICAL UNIT.

Neurones as cells—Centrosomes and attraction spheres in neurones—External morphology of neurones—The shape and size of the cell bodies—The protoplasmic processes or dendrites—Varicosities of the dendrites—The relation of the dendrites to the cell body—Adendritic neurones—Lateral buds or gemmules—The axis-cylinder processes or axones—Differential characteristics of dendrites and axones—The relations of the axones to the cell body—Dendraxones and inaxones—Monaxones—Diaxones—Polyaxones—Anaxones—Schizaxones—Modes of termination of axones—Telodendrions—The coverings of axones—Accessory branchings of the axones—The collaterals or paraxones—The side fibrils of Golgi—Substances between neurones.

It is necessary to examine a little more closely into the morphological characteristics of the individual neurones. Neurones are in reality nothing more nor less than cells, curiously modified in structure and elaborately differentiated in function, but none the less genuine body cells. It must be distinctly understood that the nerve cell includes not only the cell body and its protoplasmic processes, although these together make up the nerve cell of many of the text-books, but also the axis-cylinder process with all its subdivisions, collaterals, and terminal ramifications. According to our modern definition, each and every portion of a neurone represents an integral part of a single body cell.* As will be emphasized later, this view becomes of especial significance in the consideration of neurones in their physiological and pathological relations.

Neurones being cells of the body just as are liver cells or muscle cells, we should, notwithstanding their remarkable morphological differentiation corresponding to the high physiological functions for which they are destined, expect them to possess certain general characteristics common to all living cells. And in this expectation we are not disappointed. A nerve cell, like all others, possesses protoplasm and nucleus, the morphological characteristics of which, so far as they can at present be unraveled with the highest powers of the microscope, do not differ sufficiently from those of the elements of less noble tissues to account for their greater dignity of function. It may be that, although the microscope or the human eye will never be able to distinguish such morphological differences, chemical methods may enable us to arrive at much more satisfactory results. Despite this fact, however, thanks to some recent delicate histological methods, we are now in a position to make certain definite statements concerning the internal structure of different kinds of nerve cells.

Very recently, von Lenhossék * has brought the nerve cell into still closer agreement with the general cellular structure. He has been able to demonstrate within certain of the spinal ganglion cells (Fig. 17) of the frog the presence of a definite centrosome and attraction sphere (*Centrosphäre*). Bühler † subsequently described a centrosome and attraction sphere together with archiplasmic radiations in the nerve cell of the brain of the lizard, while Dehler ‡ has demonstrated pole corpuscles and attraction spheres in the sympathetic cells of the frog. Up to the present time these structures, to which very important functions have been attributed by many cytologists, have not been demonstrated in the nerve cells of mammals with a single exception to be mentioned immediately, but it is not improbable that the evidence for their existence in these also will soon be forthcoming. I find in the second portion of Kölliker's text-book, which has recently been published, that he has found centrosome and attraction sphere in a giant pyramidal cell of the posterior central gyrus of a thirty-year-old man.# Schaffer ‖ has also lately described centrosomes in ganglion cells.

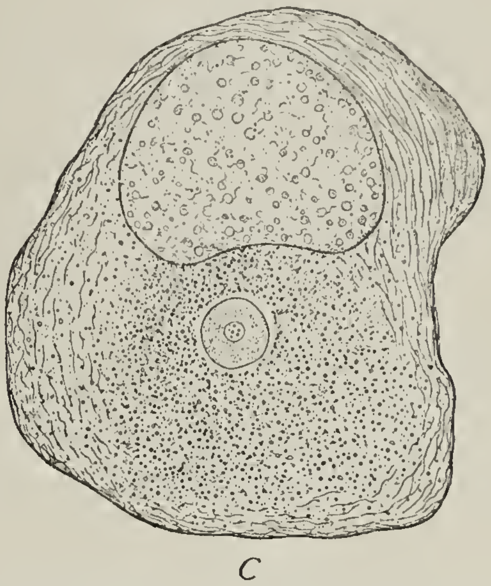

FIG. 17.—Centrosome and attraction sphere inside a spinal ganglion cell of the frog. (From Wilson, after von Lenhossék.) The attraction sphere is seen situated in the cytoplasm not far from the nucleus. Inside the attraction sphere is shown the single centrosome, which contains several centrioles.

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* The view expressed here seems to me to be logical. Von Lenhossék, I think, rather too sharply separates the axis-cylinder process as a separate entity from the rest of the nerve cell.

* Von Lenhossék, M. Centrosom und Sphäre in den Spinalganglien des Frosches. *Arch. f. mikr. Anat.*, 1895, Bd. xlvi, S. 345.

† Buehler, A. Protoplasmastruktur in Vorderhirnzellen der Eidechse. *Würzb. Verh.*, Bd. xxix, No. 6, 1895, S. 42.

‡ Dehler, A. Beitrag zur Kenntnis vom feineren Bau der sympathischen Ganglienzelle des Frosches. *Arch. f. mikr. Anat.*, Bd. xlvi, 1895, S. 724.

# Kölliker, A. *Handbuch der Gewebelehre des Menschen*, Bd. ii, S. 812.

‖ Schaffer, J. Ueber einen neuen Befund von Centrosomen in Ganglien- und Knorpelzellen. *Sitzungsber. der kais. Akad. der Wiss. in Wien*, Math. naturwiss. Classe, Bd. cv, H. 1–5, Abth. 3, S. 21.

Miss Lewis * has described centrosome and sphere with radiating fibrils in certain giant nerve cells of a new annelid (related to *Clymenella torquata*). She does not think, however, that the evidence yet suffices to prove that the central corpuscle and sphere of nerve cells and the centrosome and sphere of dividing cells are equivalent structures.

The significance for the cell economy of the centrosome and attraction sphere has been the subject of considerable controversial literature. While some histologists would make the centrosome the arch power, the seat of government, as it were, of the cell, and would give it precedence even over the nucleus, others, with Watase, look upon centrosomes merely as modified cytomicrosomes.

It must be confessed that in view of what we know of the relation of the centrosome to the phenomena of mitosis a *raison d'être* for this body within the nerve cell is at first thought difficult to find. It might be assumed, of course, that it has remained over from the last cell division. If the old view were correct, that ganglion cells fully formed never divide, little excuse could, perhaps, be found for the persistence of the centrosome. The studies undertaken of late make probable, however, the possibility of division of adult nerve cells by karyokinesis, and it is not impossible that in such cells the centrosome is of its ordinary significance. There is no ground as yet, however, for the statement that the centrosome possesses no functions other than those concerned in the division of the cell; indeed, it may have to do in many instances with motor activities of cells independent of those involved in mitosis. Besides, the existence of centrosome and sphere in many cells which are not dividing and which exhibit no definite phenomena of motility make it likely that these structures are of value to the cell in ways other than those hitherto suggested. The centrosome in nerve cells as in other cells of the body may appear solid or it may show numerous centrioles.

In my remarks regarding the structure of the neurones, it will be convenient to speak first of the external morphological relations, best revealed by the methods of Golgi and Ehrlich, and secondly of the internal architecture of the neurone, our knowledge of which has been much increased since the introduction of the newer cytological technique, and especially from the application of the method of Nissl. I have already spoken of the remarkable uniformity in type of the nerve cells in the most diverse parts of the central nervous system, and in endeavoring to emphasize this uniformity for the purpose at that moment in view, I have, perhaps, led some to infer that the neurones are everywhere so similar as to be practically indistinguishable from one another. This is by no means the case; indeed, the method of Golgi has revealed a wealth of morphological peculiarities of which we had formerly been able to obtain no adequate conception. The method of Nissl too has revealed differences of internal structure of different cell groups which are equally important for purposes of classification as the external form relations discovered with Golgi's stain. Of these a description is given further on.

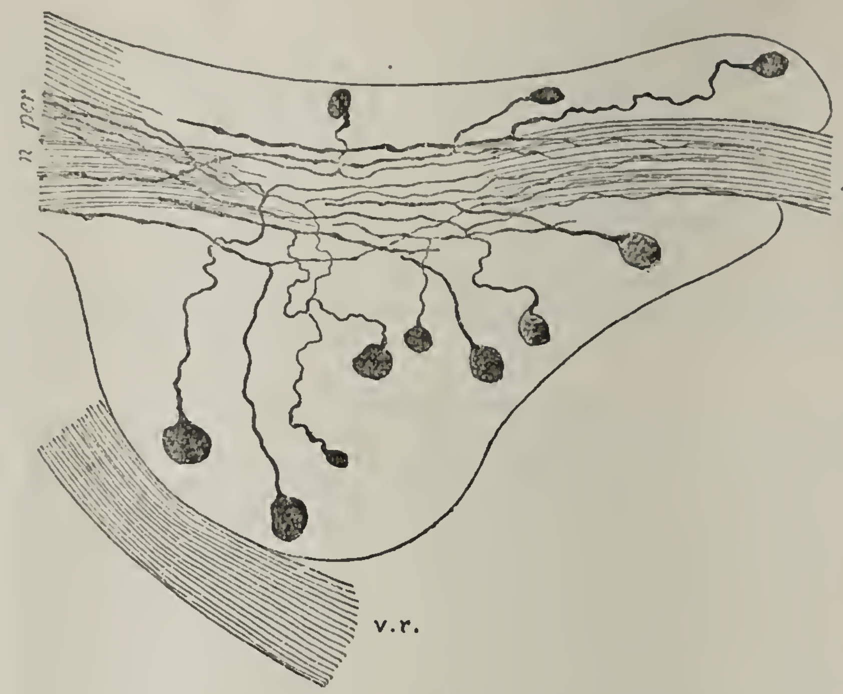

Fig. 18.—Spinal ganglion of a newborn white mouse. *d. r.*, dorsal root; *v. r.*, ventral root; *n. per.*, peripheral nerve. (After Van Gehuchten.)

There are many neurones which, from the appearance of a single example stained black with silver, permit an absolute decision as to their source. Thus we are able at once to recognize the cells of the spinal ganglia (Fig. 18), the cells of Purkinje in the cerebellum (Fig. 25), the pyramidal cells of the cerebral cortex (Fig. 20), and the cells of the pes hippocampi. The shape and size of the cell body, the number, size, and mode of branching of

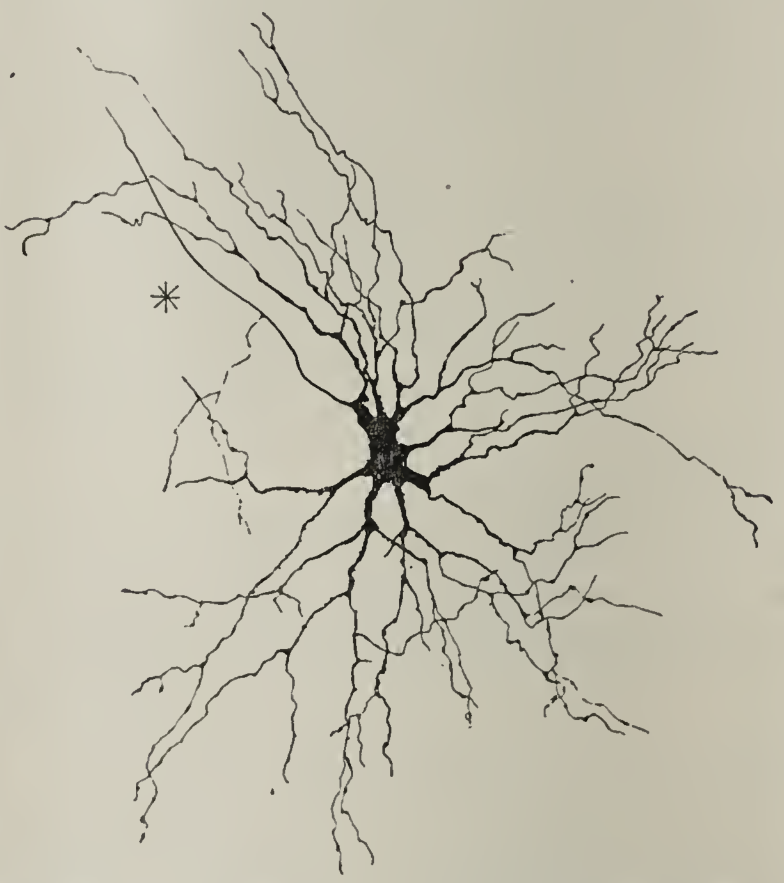

Fig. 19.—Motor cell of ventral horn of spinal cord from the human fœtus, thirty centimetres long. (Method of Golgi; after von Lenhossék.)

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* Lewis, Margaret. Centrosome and Sphere in Certain of the Nerve Cells of an Invertebrate. *Anat. Anz.*, Bd. xii, 1896, Nos. 12 and 13, S. 291.

the protoplasmic and axis-cylinder processes, the relations of these to the cell body and to one another are some of the criteria which serve to guide us in making a distinction.

The bodies of the nerve cells vary much in size, measuring from four to a hundred and thirty-five microns and more in diameter. Among the very small ones are the granules of the olfactory bulb and the small cells of the cerebellum, whereas the relatively huge protoplasmic masses, such as the larger cells of the anterior horns and the spinal ganglia or the cells of Purkinje in the cerebellum, are visible even to the naked eye. Starting originally as spherical germinal cells, the cell bodies, partly owing to the mode of origin of their processes, partly for reasons at present not clear, later assume, in different regions, very different shapes. The spherical spinal ganglion cell, the flask-shaped Purkinje cell, the multipolar ganglion cell of the anterior horns of the spinal cord (Fig. 19), the pyramidal cell in the cerebral cortex (Fig. 20), the spindle-shaped cell of certain regions are well-known and characteristic types.

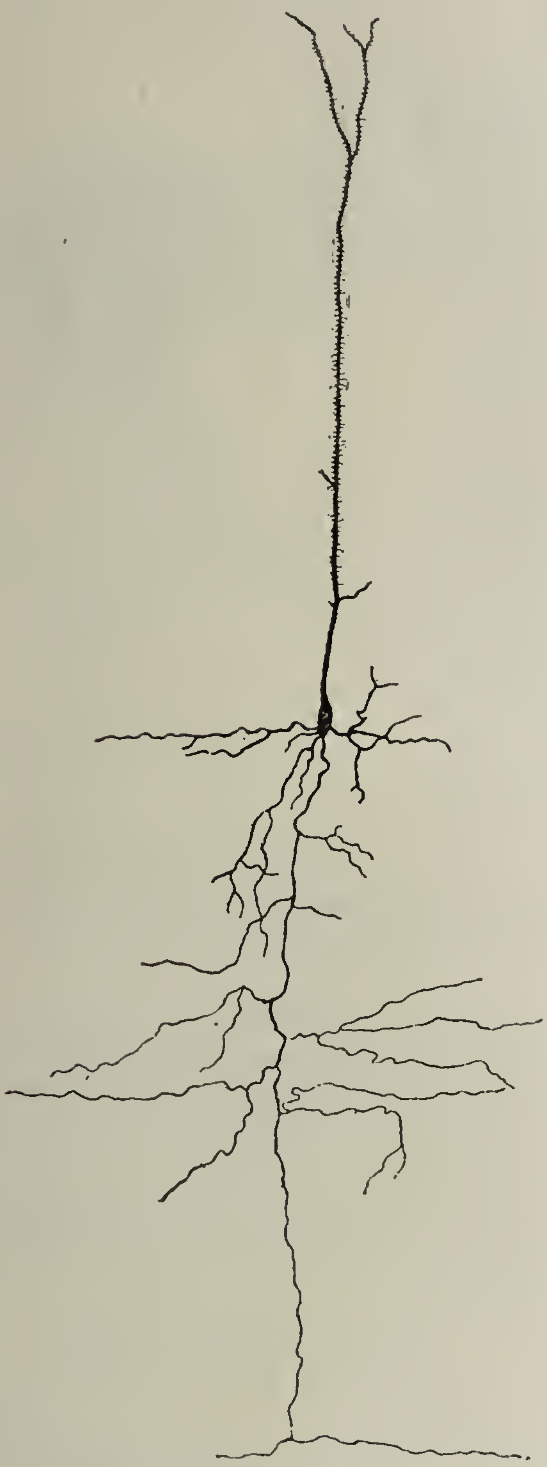

Fig. 20.—Pyramidal cell of cerebral cortex of mouse. (After Ramón y Cajal.)

Of the two main varieties of processes which come off from the cell body, the protoplasmic and the axis-cylinder processes, the former, as might be inferred from their name, resemble more closely in appearance the cell body itself. These protoplasmic processes or, as they have been better named by His, dendrites (*Dendriten*) represent, as a rule, rather coarse projections of the protoplasm, which run out often in several directions from the general mass of protoplasm of the cell body.

Broad and thick, perhaps, at their origin, they grow gradually more narrow as they divide in a dendritic or antlerlike fashion, until the final subdivisions of a single dendrite may be distributed at a distance from the cell over a territory of no inconsiderable extent. All the subdivisions of a single dendrite finally run out to end free, never, so far as our present knowledge goes (with the exception of a few rare instances), anastomosing with one another, nor becoming united in any way other than by simple contact with the processes of other neurones.* The individual dendrites, not only of different cells, but also of the same cell, may vary considerably in length. While in some types of cells all the protoplasmic processes are approximately equally developed, in other types—for example, in the pyramidal cell of the cerebral cortex—one dendrite may be enormously developed, being thick at its origin and extending for a long distance from the cell body, while the others are diminutive and comparatively insignificant in size and extent. The contour of a dendrite is often irregular rather than smooth and sharply defined. There may be nodular swellings (Fig. 21) at various points, though whether these are to be considered as normal appearances, as artifacts, or as pathological phenomena, does not yet seem entirely clear. There is, as a rule, no marked nodulation in normal specimens. Berkley, Monti, and others have observed marked

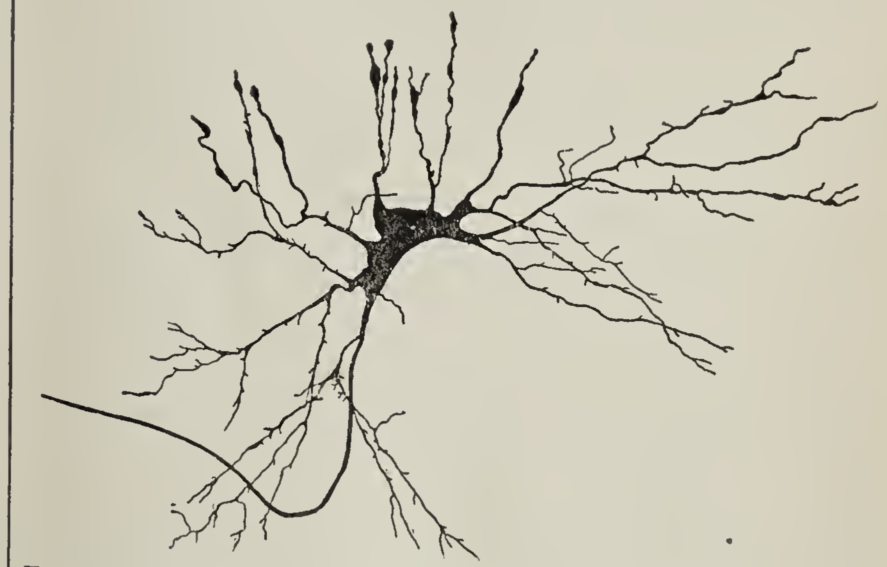

Fig. 21.—Multipolar nerve cell from the cord of the embryo calf showing varicosities of the dendrites. (After Van Gehuchten.)

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* As Van Gehuchten forcibly puts it, "Notez bien que je dis: dans l'état actuel de nos connaissances, les neurones sont des éléments indépendants; cela veut dire qu'avec les méthodes d'investigation dont nous disposons actuellement, on ne voit pas de continuité, on ne voit pas d'anastomoses entre les éléments nerveux, et par conséquent on ne doit pas les admettre."

distortions of the dendrites in certain pathological conditions.

The course of the dendrites, though sometimes tolerably straight, is usually devious; in fact, the irregularities in contour and direction are important distinguishing characteristics of this type of process. The character of the dendritic branching of the protoplasmic process varies much in cells of different parts of the central nervous system; whereas, in some dendrites the branching commences at a short distance from their origin at the nerve cell and continues more or less regularly until the final divisions occur, in the dendrites of other cells a main trunk may extend for a considerable distance from the cell and then suddenly break up into a large number of terminal dendritically branching processes. This behavior is seen in the pyramidal cells of the cerebral cortex. The degree of complexity of the branching varies enormously; in some cells the dendrites are tolerably simple and but little branched; in others, the branching is most complex. The territory occupied by these antlerlike divisions of the nerve cell may, as has been said, be very considerable. There are few greater surprises for the student in histology than when he sees for the first time a successful impregnation with the silver method of the dendrites of the Purkinje cells crowding with their dense feltwork the outer layer of the cerebellar cortex. The huge protoplasmic trunks coming off from the flask-shaped cell divide and subdivide with tropical luxuriance into widespread bushlike masses, occupying a wide territory and increasing the surface of the cell body, perhaps a hundred times or more. The significance of this cerebellar forest, as it has been called, of dendrites must be very great, but it has never as yet been satisfactorily explained; at present, we can form only hypotheses, at best very unsatisfactory, as to its meaning.

Very characteristic, too, for the different varieties of neurones is the relation of the dendrites to the surface of the cell body. In some instances, as in the motor cells of the anterior horns, they radiate out in all directions from nearly every region of the cell surface. In the cells of Ammon's horn one or two dendrites proceed from one end of the more or less oblong or fusiform cell body, and a whole group of them are given off from the other end, while the sides of the cell body are smooth and sometimes give off no dendrites at all (Fig. 22). Other cell bodies, as is the case with some belonging to the nucleus dentatus cerebelli, yield dendrites from only one side. In the pyramidal cell of the cerebral cortex the main dendrite is given off from the apex of the pyramid, while the smaller lateral dendrites are yielded mainly by the angles at the base, the lateral surfaces and the basal surface itself giving off, as a rule, very few or no dendritic projections at all. Many other examples might be given, but those mentioned will suffice to illustrate the importance of the origin, number, and distribution of the dendrites as factors in determining the morphological characteristics of a given neurone.

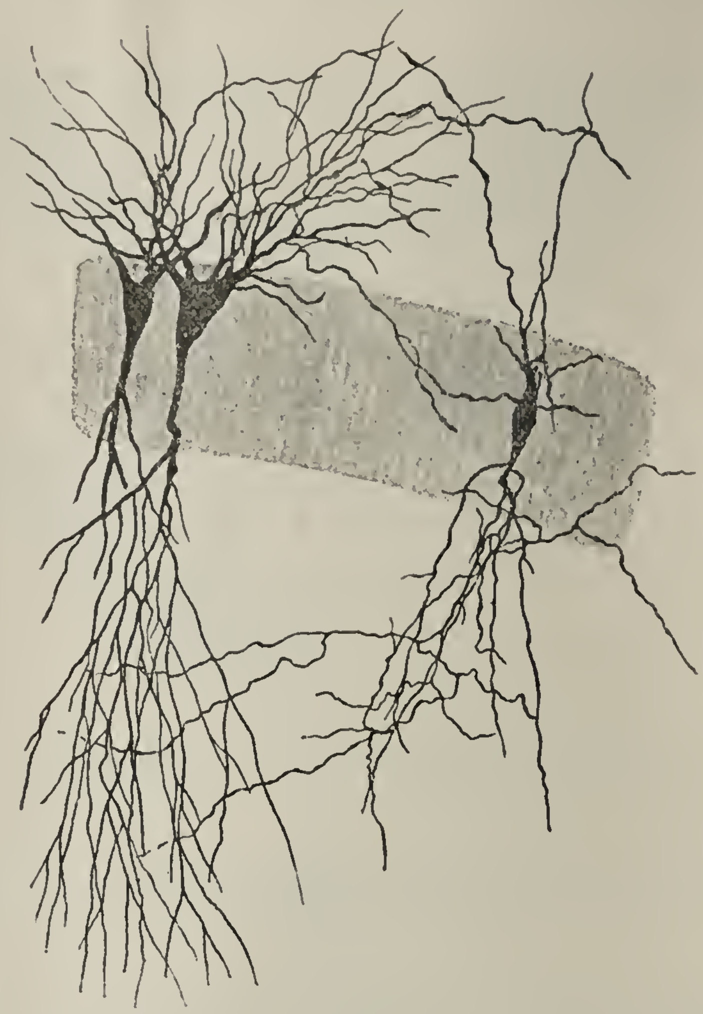

Fig. 22.—Neurones from the horn of Ammon of a puppy two days old. (After Kölliker.) Two pyramidal cells (Golgi's cells of Type I) and one fusiform cell (Golgi's cell of Type II) are shown.

The occurrence of cell bodies entirely devoid of dendrites, the so-called adendritic neurones, has to be recognized. Indeed, in invertebrates, as von Lenhossék and Retzius have shown, they are very numerous and form in these animals no small proportion of the constituents of the nervous system. In such neurones, however, the axis cylinder shows near the cell many accessory branchings (Fig. 23), which some believe to be of the nature of dendrites, though others look upon them as collaterals. The question has been fully discussed by von Lenhossék (*op. cit.*, p. 84 *et seq.*). In the adult human nervous system the majority of the neurones of the ganglia of the dorsal roots are histologically adendritic;* though embryologically, and perhaps also physiologically, the axone

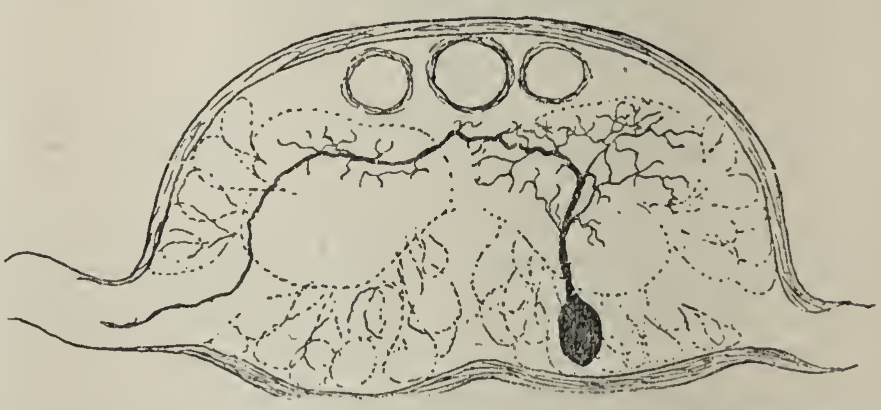

Fig. 23.—Unipolar cell from a ganglion of Lumbricus. (After von Lenhossék.) The cell body is devoid of dendrites; the accessory branches of the main processes are looked upon by some as dendrites, by others as collaterals.

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* Dendrites have, however, been demonstrated upon certain of the cells within the spinal ganglia.

of the peripheral sensory nerve fibre is more of the nature of a dendrite, yet microscopically it has every appearance of an axis-cylinder process, and indeed must be regarded as the axis cylinder of a medullated nerve fibre. The dendrites within the central nervous system are, like the cell bodies, entirely devoid of myelin sheaths.

(To be concluded.)

PRACTICAL CONCLUSIONS DERIVED FROM A STUDY OF FIVE HUNDRED CASES OF CARDIAC DISEASE, WITH A SPECIAL ALLUSION TO THE COMPARATIVE PROGNOSIS OF THE VALVULAR LESIONS.*

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Among 5,827 patients under the author's observation and treatment at the general medical clinic of the New York Post-graduate Medical School, 503 were found to be suffering from some form of disease of the heart or great thoracic vessels. These cases may be divided into two chief classes as follows: Functional disorders, 277 cases; organic diseases, 226 cases.

Subdividing the organic cases with reference to the nature of the lesions or the valves involved, we obtain the following result: Mitral regurgitation, 60 cases; mitral stenosis, 35 cases; aortic regurgitation, 7 cases; aortic stenosis, 36 cases; tricuspid regurgitation, 6 cases; pulmonary stenosis, 1 case; double aortic lesions, 19 cases; double mitral lesions, 12 cases; aortic stenosis and mitral regurgitation, 4 cases; aortic regurgitation and mitral stenosis, 2 cases; aortic regurgitation and mitral regurgitation, 2 cases; double aortic lesions and mitral stenosis, 1 case; double aortic lesions and mitral regurgitation, 4 cases; combined double aortic and double mitral lesions, 2 cases; mitral lesions of doubtful character, 4 cases; aortic lesions of doubtful character, 3 cases; simple cardiac hypertrophy without apparent valvular lesion, 10 cases; angina pectoris without valvular lesion, 3 cases; myocarditis, fatty degeneration, etc., 6 cases, thoracic aneurysm, 6 cases.

A closer analysis of these cases yields several facts of interest. Of the total number of persons under observation, 3,344 were males and 2,483 were females. These embraced persons of all adult ages, above fourteen or fifteen, and, as a rule, were drawn from the working classes representing the usual trades and avocations of city life. Among the 3,344 males we find that 149, or about 4.45 per cent. of the number, suffered from functional troubles, while 137, or 4.09 per cent., had organic heart disease. Of the 2,483 females, 128, or 5.15 per cent., had functional disease, and 86, or about 3.46 per cent., had organic lesions. This shows a considerable preponderance of males suffering from organic disease, while among the functional troubles the females predominated in about the same degree. At this point it may be stated that a great majority of these cases were under observation for a considerable period of time, some of them for years. Many of them formed the basis of clinical lectures at the Post-graduate Medical School, both by Professor S. S. Burt and the writer. It may be further stated that the author's conclusions regarding the clinical features of these cases are in general sustained by his experience of ten years in a special chest clinic, at which a much larger number of heart cases were under observation, but of which no data are at hand. Among males it was found that one of three great causes could usually be assigned for functional disorders. In the order of frequency these were: (1) Reflex disturbances due, as a rule, to digestive disorders; (2) the use of tobacco in excess, especially among adolescent youths; and (3) too liberal indulgence in alcoholic liquors. It is probable that an autopsy would have shown the existence of organic changes in several cases of the latter class, but in the absence of positive signs they were ranked as functional in character. This contribution is not intended to embrace the subject of treatment, but it may be stated that most of the functional complaints were improved by proper attention to the digestion and by a withdrawal of the offending cause. Among the female patients the causes operating to produce functional disorders of the heart were mainly those referable to digestive disturbances, and to diseases of the blood—anæmia, chlorosis, etc. Only a minute proportion could be justly attributed to excessive tea drinking. By including cases of anæmia and blood disorders the number of females suffering from some form of nervous or functional cardiac disturbance might be materially extended, but none are included in the list, except those in which the cardiac symptoms predominated or constituted the chief clinical feature of the case. Many of these functional cases presented well-marked cardiac or vascular murmurs and closely simulated organic disease, but the differentiation was usually readily made by rules which the author has previously laid down.* The writer would like to emphasize the fact at this point that the hæmic murmurs are almost invariably systolic in time, occurring either over the aortic or pulmonary areas, or in both regions, are usually transmitted into the great arteries of the neck, where they may be classed as vascular bruits, and are in a majority of cases accompanied by a venous hum. The blood murmurs are rarely audible below the third rib, and in more than a hundred consecutive cases the author found the maximum intensity of these bruits over the mitral area in only two. The functional murmurs of anæmia usually disappear *pari passu* with the improvement in the general condition. Coming to a consideration of the valvular lesions, we are struck by the preponderance of cases of mitral regurgitation, this condition being present in nearly twice the proportion of any other lesion. Cases of aortic stenosis, it will be seen, were next in frequency, followed closely by mitral stenosis, while aortic regurgitation is far behind with only seven cases.

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* Read before the Medical Society of the State of New York at its ninety-first annual meeting.

* *New York Medical Journal*, June 11, 1887; also, *American Journal of the Medical Sciences*, February, 1893.

These results are quite in accord with those of Ashton,* who, however, found aortic regurgitation in slightly greater frequency than mitral stenosis. In a recent analysis of 1,024 cases of valvular lesions discovered in persons undergoing physical examination for life insurance, Ashton obtained the following results: Mitral regurgitation, 557 cases; aortic stenosis, 136 cases; aortic regurgitation, 47 cases; mitral stenosis, 32 cases.

Among the double or complicated lesions in the author's list, it will be seen that aortic regurgitation was present as a component more frequently than any other condition.

In the diagnosis of this lesion the author would like to emphasize the importance of the Corrigan or water-hammer pulse, this being a full, forcible impulse accompanied by locomotion of the arteries and followed by a sudden, instantaneous recession. This pulse was present in every instance where aortic reflux was involved. It was also found in three other cases in the list classed as doubtful, in which no murmur was present. The writer is strongly of the opinion that the water-hammer pulse is as valid, and probably a more constant physical sign of aortic insufficiency than the murmur itself.

The question is sometimes asked of teachers of physical diagnosis and clinical medicine, "Why is it necessary to discriminate between the valvular murmurs, or to be able to distinguish one from another; are not the elements of treatment practically identical under the same conditions in all cases?" Disregarding at this time the subject of treatment, the author would say that at least one important reason for a discriminating diagnosis in these cases is involved in the question of prognosis.

In the brief space allotted to this paper it is not proposed to enter into a discussion of the numerous pathological elements which attend the production of the valvular lesions, nor the mechanical problems which enter into the question of stenosis, insufficiency, dilatation, etc. But the author has long since come to the conclusion, based on the clinical observation of cases and watching their progress, that the probabilities of compensation and toleration of a valvular lesion vary greatly with the valve involved and the nature of the defect.

Among the valvular troubles the one most fatal in its tendencies and offering the least hope for a stable compensation is aortic regurgitation. A study of the mechanical conditions resulting from this lesion shows that the intrinsic tendency to a sudden fatal termination is very great. It is more quickly followed by dilatation and hypertrophy than any other lesion. This condition was present in all the extreme cases of *cor bovinum*, or extensive cardiac hypertrophy and dilatation, which have been under the writer's observation. Aortic disease is certainly more common in the male than in the female sex. This has been shown by previous records. Among the eighty cases in the table there were fifty-one males and twenty-nine females, a far greater disproportion than existed in the entire number of the two sexes attending the clinics. The fact that the occupations of men, as a rule, bring a greater amount of strain on the aortic valves than in the case of women, may serve to some extent to account for the increased fatality of aortic regurgitation. All the cases kept under observation by the writer for any considerable length of time showed a tendency to progress. Two cases died suddenly, three others died of complications, while several were in a moribund condition when last seen. While it is entirely true that a slight leakage at the aortic ostium may be borne with comparative comfort for many years, it is the writer's opinion that such cases must be very few in number. The probabilities of prolongation of life in any well-marked case can not be safely extended to a longer period than four or five years.

Among the writer's patients mitral stenosis has been about six times as frequent as uncomplicated aortic regurgitation. This lesion is often well borne for many years. One patient with a well-marked presystolic murmur at the apex attended the clinics of the Post-graduate Hospital for a period of nine years, and was finally lost at sea aboard a cattle ship. Yet, in the degree of discomfort and distress to the patient, and in its ultimate fatal tendency, the author would place this lesion next to that of aortic insufficiency. These cases are much aggravated by intercurrent attacks of bronchitis, while pneumonia is very apt to prove fatal. The liability to sudden death is not great, but the probability of complications involving the systemic as well as the pulmonary circulation are quite considerable. Life may indeed be sustained indefinitely by a careful *régime*, but a patient suffering from mitral stenosis is, in a sense, hopelessly crippled, and will surely require medical aid at frequent intervals.

Uncomplicated aortic stenosis is a very frequent cardiac lesion, standing second only to mitral regurgitation among the author's cases. The lesion is often well borne for a long time. In not a few instances it was discovered accidentally while the chest was being examined for other troubles. A moderate amount of hypertrophy of the left ventricle, in some cases hardly sufficient to be recognized during life, will overcome moderate degrees of obstruction, and the lesion will remain well compensated for many years. Yet there can be no doubt that this lesion constitutes a most serious, though often insidious, menace to life. The liability to sudden death from overdistention of the left ventricle is ever present. One of the patients enumerated in the list died while sitting under an apple-tree in the apparent enjoyment of good health and entirely free from cardiac symptoms. Dangerous attacks of syncope resulting from anæmia of the brain were observed in a number of the cases. It is not improbable that not a few of the obscure cases of sudden death of persons apparently in perfect health might be accounted for by the presence of latent aortic stenosis. This lesion is believed to stand in a close causative relation to cerebral embolism, but so far as could be learned this complication has not occurred in any of the author's cases.

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* *Medical News*, June 30, 1894.

It has been the writer's experience that while mitral regurgitation is the most frequent, it is also the most hopeful of all the valvular lesions, and is also the most tractable when complications begin to appear. Numerous cases of this affection have been kept under observation for many years, the patient in the mean time suffering no serious inconvenience. The patient presented to you to-day has had mitral regurgitation since the spring of 1864. He suffered from a sharp attack of articular rheumatism in February of that year, when sixteen years of age. Cardiac symptoms ensued during the following April, when the diagnosis of mitral regurgitation was made by the family physician, Dr. Samuel T. Hubbard, of New York. The diagnosis was confirmed by Professor Austin Flint, Sr., in June, 1865. Since that time the patient has led an active, busy life as a journalist, having been editor of several well-known metropolitan publications. He has suffered from three or four subsequent attacks of articular rheumatism, but there has been no extension of the valvular trouble. During this long period of thirty-three years the patient has been under the care of Dr. Flint, Dr. Fordyce Barker, Dr. George M. Beard, and Dr. E. Darwin Hudson, all of whom have passed away. He has been under the author's observation since 1890. As you will observe, he is still in possession of all his mental and physical faculties, and bids fair to hold out for many years to come. The left ventricle is not much hypertrophied, but a very plain and distinct systolic murmur is heard at the apex and transmitted to the left, being also quite audible below the inferior angle of the left scapula. The pulse-rate is never less than 83 per minute, and seldom rises much above that rate. There are a few occasional subjective symptoms, dizziness, ringing in the ears, slight dyspnœa, etc., but they do not cause serious inconvenience. These cases often remain entirely mute or latent during the life of the patient. In one recent case observed by the writer a period of thirty years elapsed between the attack of articular rheumatism, in which the valvular lesion originated, and the appearance of cardiac symptoms which led to its discovery. The cases of tricuspid regurgitation under the author's care have generally been secondary to pulmonary emphysema. This lesion is a serious complication of emphysema, and, as a rule, it is apt to be quickly attended by cyanosis and dropsy.

36 East Twenty-ninth Street.

The Richmond Academy of Medicine and Surgery.—At the last regular meeting, on Tuesday evening, the 8th inst., Dr. John F. Winn was to open a discussion on The Management of the Occipito-posterior Position.

A NEW SET OF SNELLEN'S TEST CARDS.

By MATTHIAS LANCKTON FOSTER, M. D.,
ASSISTANT SURGEON, MANHATTAN EYE AND EAR HOSPITAL.

It is a matter of common experience with all ophthalmologists who use the ordinary Snellen test cards furnished by the various opticians in this city, that very many patients appear, when tested, to have better than normal vision. After all due allowance has been made for the increased acuity of vision which is one of the results of the education and training of the eye to habitual fine work, a large percentage of cases remain in which vision of $\frac{20}{15}$ can be obtained although the eyes have not been subjected to such an education and training, and the average vision obtained in these cases suggests that the letters subtend an angle greater than five minutes, in which case the records obtained are faulty and unreliable. Measurement of the letters on a number of cards and calculation of the distances at which they would subtend an angle of five minutes revealed clearly that these distances were greater than purported to be the case. Thus on every card which I examined the letters which should have subtended the angle of five minutes at twenty feet really subtended that angle at about twenty-six feet; those which purported to be visible at a hundred feet subtended this angle at about a hundred and seven feet, and the other letters were likewise too large. On a few cards the fifteen-foot line was nearly correct, but usually it was as faulty as the others. A brief search did not reveal to me in any of the principal text-books the exact measurements of Snellen's test types, so I will give the results of my own calculations as data by which the accuracy of test types may be judged.

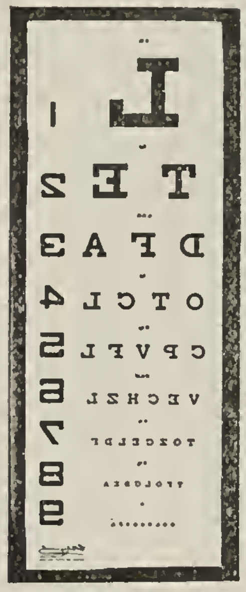
To subtend an angle of five minutes at 200 feet, a line must be 3.492 inches long; at 100 feet, 1.745 inch long; at 70 feet, 1.222 inch long; at 50 feet, 0.8727 inch long; at 40 feet, 0.6981 inch long; at 30 feet, 0.5236 inch long; at 20 feet, 0.3490 inch long; at 15 feet, 0.2618 inch long; and at 10 feet, 0.1745 inch long.

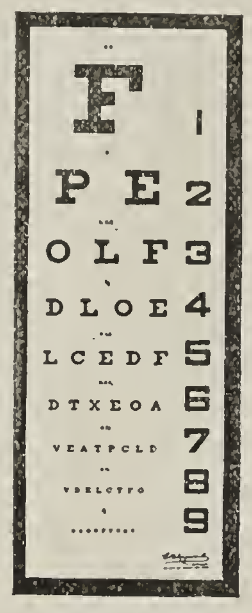
To form the test letters, each line is squared and each square subdivided into twenty-five equal squares, each side of which subtends an angle of one minute. The large square limits the height and breadth of the letter, while each stroke of the letter is equal in breadth to that of one of the small squares and in length to an exact multiple of its breadth. With letters thus formed, colored black, on a good background and in a good light, accurate observations can be made.

It is undesirable to place the card at a less distance from the patient than twenty feet, or six metres, because of the error consequent upon the increased angle of divergence of the rays entering the eye from the object. Therefore for use in a small office these cards are made reversed, that their reflection in a mirror can be utilized so as to separate the patient from the types by a proper distance. A considerable experience has proved this expedient not only theoretically correct but also perfectly practicable.

A printed pasteboard card is objectionable for several reasons. It quickly acquires, even if it does not at first possess, a creamy tint which is an inferior background for black letters to a blue-white or a dead white. It soon becomes soiled and imparts an untidy appearance to the office, which necessitates frequent changes of the card. These frequent changes, together with its great cheapness, tend to induce a relaxation of the effort to secure test types of correct size which would be expected if test cards for permanent use were to be obtained.

In order to secure a correct type in a permanent form I have had made for me by B. M. Levoy, 54 East Twenty-third Street, four test cards with letters of accurate size etched on opal glass which furnishes a good, blue-white background. They present a neat and creditable appearance when framed, and can easily be kept clean. They may now be obtained of E. B. Meyrowitz, 104 East Twenty-third Street.





22 East Forty-first Street.

INTESTINAL INDIGESTION IN ITS CLINICAL ASPECTS.*

By HENRY S. UPSON, M. D.,

PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM
IN THE WESTERN RESERVE MEDICAL SCHOOL, CLEVELAND.

In introducing to your notice the subject of digestion as a causative factor in nervous disorders, it is hardly necessary to more than indicate the very unsatisfactory state of our knowledge of the digestive processes. We may regard the gastro-intestinal tract as, in its upper part, a laboratory for the digestion and absorption of food, and in its lower part a breeding ground for bacteria, always present in vast numbers in health, and in disease either increased in number or changed in kind. The processes of digestion which are carried on in the stomach are of prime importance in their relation to the nervous system. It is, however, disturbances of the intestine, the so-called intestinal indigestion or intestinal dyspepsia, of which I wish to speak at present. The chemical part of this subject has been very carefully worked up and presented to this society by Herter, who followed up Baumann's discovery that the organic sulphates found in the urine are almost invariably the result of putrefactive changes in the intestine.

The somewhat varied symptoms which may accompany the increased excretion of these sulphates, and the fact that it is by no means certain that all the poisons elaborated in the intestine are so excreted in the urine, make the study of the clinical types of intestinal indigestion not entirely devoid of interest. I wish to call your attention, therefore, in brief to three cases, one of nervous phenomena from poisons formed by a known and very familiar germ in the intestinal canal, another from the action of a germ equally well marked in its characteristics and of the same habitat, and the third a case presenting nerve symptoms quite similar in kind, but of somewhat more uncertain cause.

A medical student, twenty-four years of age, was brought to the Lakeside Hospital, October 1, 1895, at the end of probably the first week of typhoid. He had had headache, backache, and lassitude for two or three weeks; had had a great deal of nosebleed, and a rise of temperature had been present as nearly as we could judge for a week. His temperature on admission was 103.2°; the spleen was enlarged; there were no rose spots. The bowels were constipated; the patient was even thus early very delirious at night, and his mind was somewhat wandering during the day. There was no tympanites. He had been very restless and had not slept for several nights. He was put on a milk diet, given hydrochloric acid, ten drops after each glass of milk, and thymol, two grains every two hours. In spite of twenty grains of Dover's powder and five minims of Magendie's solution of morphine hypodermically he slept practically not at all. Without giving the case too much in detail it will suffice to say that the delirium increased, there was subsultus tendinum, and at last coma vigil for the whole twenty-four hours with extreme tympanites for several days. During the week attempts had been made to clear the bowels with small doses of calomel and frequent rectal injections, with only partial success. The patient was then, on the afternoon of the 6th, given an eighth of a grain of calomel every hour during the day and every two hours during the night. At the end of twenty-four hours he had had a good movement of the bowels, was much less restless, and began to sleep fairly well at night. After the first movement of the bowels he slept several hours. The tongue, which was very dry, cleaned off and became moist. The calomel was continued for a time, and later, after about ten days, was replaced by magnesium sulphate every two or three hours, and this was continued until the temperature was normal. He was given three or four baths at 75° at about the time the bowels were cleared. The temperature was brought down about a degree by each bath; it was at no time during his illness a threatening symptom, and ranged from 101° to 104°.

I cite this case, not as proving anything regarding the treatment of typhoid fever, but as showing for comparison a very familiar clinical picture of general poisoning of the nervous system from the intestines, which we may see duplicated in many of its details in widely different conditions. The great improvement in the patient's condition did not coincide with a drop in his temperature, and it occurred at the beginning of the third week, not during defervescence during the fourth week. It was coincident with a clearing out of the intestinal canal and a washing of the skin.

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* Read before the American Neurological Association, June, 1896.

In the second case the ætiology is not quite so obvious, as the original disease had been recovered from, and the symptoms supervened when the patient was up and about.

Mr. F., sixty years of age, a merchant. First seen October 23d. The patient was fairly well until six weeks ago, when he had a severe attack of dysentery. For a month or two, however, he had felt restless and a little below par. He made a good recovery from the dysentery, although the attack was a very obstinate one. He was given opium and bismuth in fairly large quantities. The stools were bloody and contained mucus. There was no known cause for the attack. Convalescence was well established and the patient began to eat solid food, when a week ago, without any apparent cause, he developed very excessive nervousness. This comes on in attacks, always in the afternoon, at times varying between one and six o'clock; there are great restlessness, headache, dull and frontal in character, and a distressed feeling. The patient is unable to sleep, and has had morphine in moderate quantity, and chloral, about fifteen grains at a dose. He then gets a good night's rest and feels better in the morning, only to be attacked again in the afternoon.

On examination, the patient is fairly well nourished but very bloodless. He is much depressed, cries readily, insists that he "must go home," and is, in general, one of the most abject specimens of mental misery that I have seen. His condition may best be described as one of restless melancholia. He breathes rather rapidly, and turns his head from side to side, but is perfectly rational. The pupils are equal and react to light. The field of vision and the optic discs and retinæ of both eyes are quite normal. Knee-jerks are lively. Motion, station, and sensation are good in every respect. The pulse is full, regular, soft, and compressible, 80. There is no fever; the heart and lung sounds are normal. A very little abdominal tenderness is noted in the left hypogastrium; the area of splenic dullness is somewhat enlarged. The abdominal organs are otherwise apparently normal. His urine is yellow, acid, 1.013; it contains no albumin, sugar, or indican. The microscope shows slight deposits of epithelial cells. There was ordered a glass of milk every hour with nothing else to eat; strontium salicylate, ten grains, four times a day; calomel, a sixth of a grain every two hours; chloral, fifteen grains by rectum in the evening to induce sleep.

October 24th, 9 A. M.—The patient is of a slightly better color than yesterday and, as always in the morning, is somewhat quieter. He slept fairly by chloral and morphine, a sixth of a grain, during the night.

25th, 9 A. M.—There was no nervous attack yesterday afternoon, the first afternoon without one for a week. The patient slept well without chloral or morphine. He still cries rather easily. He had a movement of the bowels in the night and another this morning. The movements are dark, fluid, and offensive.

27th.—The patient has had no severe nervous attacks, but was slightly restless for a time yesterday. He has felt much better all day to-day. The stools for the last thirty-six hours have been much lighter in color and have a strong smell of whey. To-day they are less fluid, but are still very soft.

29th.—A soft egg, toast in moderate amount, and boiled rice were added to the patient's dietary, beginning yesterday morning. He felt well until yesterday afternoon, and then was restless. He had a little pain in the abdomen during the night and was quite restless and did not sleep much until twelve o'clock, when fifteen grains of chloral were given him. He then had a good sleep, and feels a little better this morning. Milk diet was resumed, each glass to be followed in half an hour by hydrochloric acid.

31st.—The patient was better till last night, when he had a nervous attack, and spent a rather sleepless night. There seems to be a periodicity about these attacks. They came every afternoon when he was at home; they now come about every other day, but do not always occur at the same time of day. Examination of the blood fails to show malarial plasmodia. He was ordered Warburg's tincture instead of the calomel, and quinine, four grains four times a day, in place of the salicylate.

From this time on the patient's condition improved in the main, although slowly. He was for a time somewhat more restless every other day, but had no very severe attacks. The stools were fairly light colored and became gradually less offensive. He was given salol, four grains, and calomel, a sixth of a grain, every two hours, with Fowler's solution for some days. He made a good recovery.

The nature of the putrefactive changes in this case is not quite clear. The patient's place of business is on the edge of a mill pond, and malaria is moderately prevalent in his native place. His dysentery may have been amœbic in origin and his subsequent symptoms malarial.

Many clinical facts point to the occurrence of the *Plasmodium malariæ* in the intestinal contents. The pabulum, most nearly like its native swamps, is certainly furnished by the fæces. In malarial cachexia, in which the germs are not found in the blood in an active state, the symptoms are partly due to poisons produced presumably by active bacterial action, and are largely intestinal, pointing strongly to the presence of the germs in the intestinal canal.

Cholera, typhoid fever, dysentery, and malarial disease are the only diseases known to be water borne. In the other three the germ certainly inhabits the intestinal canal; that of malaria may reasonably be expected to do the same. The plasmodium is very difficult to find, which may account for the fact that it has not been found in the fæces, as have the germs of typhoid fever and cholera. The *Amœba coli* was absent in this case, as was to be expected after the cessation of stools containing mucus.

The next case is that of a woman, Mrs. S., aged fifty-four years. She was first seen August 29, 1895. The patient is quite fleshy, and has always been quite well until last spring. Then, in March, her husband accidentally shot himself, and she was called to the hospital to see him. He made a good recovery, but she felt the shock very much and was a good deal depressed by it. She showed much anxiety during his illness. Since then she has been downhearted, cries rather easily, has absolutely no appetite, and feels weak. There have been no hallucinations or delusions. She has more or less headache, the bowels are quite constipated, and she has to take pills to induce a movement. She sleeps very badly, lies awake in a very restless condition a good part of the night, and arises unrefreshed. She is unfitted for her work, and is, in fact, so much depressed that she is afraid she will be sent to the asylum. She has a great deal of pain and rumbling of the bowels. She ceased menstruating eight or nine years ago; she had no special trouble at that time, and has had no discharge of any kind since. Her pupils are equal and react to light and with accommodation. She has no paralysis or anæsthesia. The pulse is soft, full, and regular, the rate not noted. The heart and lung sounds are normal. The spleen and liver are not enlarged. The urine is yellow, acid, 1.024, and contains no albumin or sugar. It was examined a few days after treatment was begun and contained oxalate of lime crystals; the patient pleaded guilty to having tasted some tomatoes which she was canning. On subsequent examinations no oxalate of lime was found. A few epithelial cells were seen microscopically, but no casts. She was put on a milk diet, one glass to be taken every hour, and strontium salicylate was prescribed in doses of ten grains four times a day.

On the 5th of September she was again seen. She had slept very well every night for the past week, except the night of the 4th, when she was somewhat restless. She had regained her appetite, and begged to be allowed something to eat. She had adhered to her milk diet fairly well, had nibbled an occasional cracker, and tasted stewed tomatoes once, as above noted. The same treatment was continued. Improvement was steady for several weeks. She lost fifteen or twenty pounds in weight, which she could well afford to do, but was quite cheerful when seen. The rumbling and flatulence had entirely disappeared. On September 24th she was put on a diet of broiled and roasted beef, mutton or chicken, soft eggs, stale bread, cooked fruits, and boiled rice. At the end of a week of this diet the salicylate was stopped. She continued to do well for three weeks. At the end of that time she visited a friend who was quite sick, was much troubled about it, and began to be somewhat restless, and to have more or less rumbling in the bowels. The diet was continued, and benzosol was ordered in doses of three grains three times a day.

This patient has been seen several times since. She has been very well as long as she adhered to a fairly strict diet. As soon, however, as she began to eat fresh bread, raw fruits, and acids, or rich, greasy articles of diet, she had a relapse. These attacks have invariably yielded to moderate care in eating and the administration of a simple antiseptic, such as one of the salicylates or benzosol.

The last case cited is typical of many similar ones which I have seen. Mankind may be divided into two classes, the constipated and the loose. I have seen cases of intestinal indigestion go on for some years in people with naturally loose bowels, without giving rise at any time to acute toxic symptoms. These persons are apt, however, to become quite anæmic. In such cases morphine or other agent to check the action of the bowels is apt to set up a toxæmia by giving time for greater absorption from the intestinal canal.

In treating these cases one of three things may be done: kill the germ, starve it, or drive it out. Needless to say, the ideal antiseptic, sure death to all germs wherever located, has not been found. None the less, the statement recently made, that by count the germs passed in the fæces are not less in number while an antiseptic is given, is by no means conclusive that germicides given by the mouth are valueless. Consider that the gut is twenty-seven feet long; that bacteria mostly abound in its lower part; that absorption is most active in its upper part; and it is easily seen that germ action may be strongly inhibited in the stomach and upper gut by drugs, as it probably is by the gastric juice and the bile, without decreasing perceptibly the swarms that normally occupy the lower bowel.

It is possible that poisoning may be set up in some cases without increase in either the germs or the toxines formed. The lower bowel has a comparatively non-absorbent surface. It has been shown that the bladder, which normally absorbs no poisons, when inflamed takes them up freely. The same may be true of the intestine, and it always contains toxines.

I usually, therefore, in such cases give an antiseptic, believing that if the small amount of creosote in smoke inhibits putrefaction in meat outside the body, and if a moderate amount of salicylic acid added to milk prevents it from fermenting for several days, the same substances may inhibit these processes, for a time at least, in the stomach and upper gut, where the most harm is done.

Second. Diet is more important than medicine. I am told, by an extensive breeder of hogs, that the disease which is most common and fatal in that animal is indigestion. He receives so many letters of inquiry from different parts of the country in regard to animals so afflicted that he keeps a stock letter in reply, advising that the animal be turned into a pasture or wood lot, be fed nothing, but left to shift for himself, and be compelled to live on what grass and roots he can find. This is called the "root-hog-or-die" treatment. It finds its analogue in the milk-diet treatment of indigestion in the human body. Milk is by most people easily digested, not enough can be taken to supply much nutritious material to the blood, so that the assimilative organs have a rest, and little residue finds its way to feed the bacteria in the lower bowel. When other articles of diet are added, experiment is often a sufficient guide in choosing them, and two classes of substances are especially apt to give trouble—the vegetable albuminoids in cases with excess of the ethereal sulphates in the urine, the animal albuminoids in cases of the so-called uric-acid diathesis. Starches should be given in their more digestible forms; sweets and pastries should be withheld.

In the third place, the bowels should be kept open. Nature often does that; but it is not enough that the patient have frequent diarrhœal movements from the lower bowel. The duodenum should be unloaded regularly.

Three cases do not constitute statistics. I can only state my conviction, from a somewhat extended experience in this class of cases, that the type of nerve disturbance found in typhoid fever, and in connection with and after diarrhœa and dysentery, is found in intestinal indigestion without the intervention of these disorders. It may be easily confounded with mild melancholia or neurasthenia. It presents many points of resemblance to nicotine poisoning; it must be carefully distinguished from nerve disorders arising from reflex; it is amenable to treatment, which should not consist solely in the administration of an antiseptic.

THE TREATMENT OF COMPOUND FRACTURE OF THE LEG.*

By MONROE B. LONG, M. D.,
PLAINFIELD, N. J.

THE subject assigned me, The Treatment of Compound Fracture of the Leg, is one in which I am greatly interested, and I am sure that it is of interest to every member of our association. We are interested in this fracture because of its frequent occurrence, of the difficulties attending its successful treatment, and of the danger always present of losing the leg thus mutilated.

I will not weary you with the teachings of our textbooks concerning this fracture further than to state that in a general way they advise the careful setting of the broken bones, and how to retain them in apposition by properly adjusted splints or a well-padded fracture box. They teach the necessity of the employment of antiseptic dressings, and of the establishment of free drainage in every case. Very little is said about wiring the bones in any of the recent works on surgery.

I propose to state briefly the clinical history and treatment of three cases of compound fracture of the leg which have recently come under my care; and then, from this limited experience and from what I have gleaned from others, I will submit for your consideration what I believe to be the best up-to-date treatment of this accident.

CASE I.—A. M. F., a man, aged seventy years; nativity, United States; health good. Received, when several miles from home, a compound fracture of the leg July 15, 1895. A local physician set the leg, and the patient was then conveyed to his home, where his family physician saw him on the evening of the same day. The following day he was admitted to the hospital. Suitable splints were applied. There was now a very free oozing of serum, which gave way in a few days to a profuse discharge of pus.

On July 21st, six days after the accident, the patient was etherized and the open wound was enlarged by a longitudinal incision about four inches in length; through this opening two large detached fragments of bone were removed, the sharp ends of the broken tibia were cut off, and the broken bone was finally wired together. An opening was now made down through the leg to obtain free drainage. Antiseptics were freely used. All this did not arrest the increasing suppuration or prevent a general sepsis. August 3d, nineteen days after the accident, the leg was amputated.

CASE II.—A. Z., a man, aged twenty-one years; nativity, Hungary; health good; admitted to the hospital on the day of the accident, April 24, 1896. The leg was set and placed in a plaster splint. It appeared to be doing well until the tenth day, when a bloody serum escaped from the wound and a fever developed. Two days later a free discharge of pus was observed. On May 9th, fifteen days after the receipt of the injury, the patient was etherized. On removal of the splint it was found that there had been no attempt at repair. An incision was made, including the open wound, and four detached fragments of bone were removed; the ends of the broken tibia were then approximated and wired. An opening was made down through the leg for drainage. Local antiseptic treatment was observed, lateral splints were applied, and the leg was slightly suspended from the bed. The patient was placed upon a nutritious diet, but it was all to no avail. The leg was amputated on May 26th, thirty-two days after the accident.

CASE III.—C. G., a man, aged twenty-one years; nativity, Denmark; health good. Received a compound fracture of the leg July 5, 1896. This patient was taken directly to the hospital, an anæsthetic was given, and the external wound was enlarged by a longitudinal incision over the tibia; a detached fragment of bone was removed, and the fractured ends of the bone were brought together and firmly wired. The leg was dressed antiseptically and placed in a well-padded fracture box. It improved daily. At the end of two weeks the flesh wound had healed with the exception of a small opening on the inner side of the tibia, from which a little pus escaped. A large amount of callus surrounded the bone, except at the point of discharge; here, at the end of the third week, a portion of the inner wire was still bare. I removed this, and the exudation of callus was soon complete. The other wire is still in the patient's leg. He was discharged cured September 16th, ten weeks from date of injury.

These cases were similar in many respects. All were in healthy men, each received a compound fracture at the lower third of the leg, and in each there was one or more detached fragments of bone. They differed, however, in this: In Cases I and II the leg was placed in splints at once, and was not explored and wired until the sixth and fifteenth days, respectively, after the receipt of the injuries. In Case III I operated at once. The first two resulted in the loss of the legs; the third patient recovered with a good leg.

We know that this fracture usually occurs at or near the lower third of the bone, being the narrowest and weakest part; it is usually accompanied with fracture of the fibula. It generally takes place obliquely, from above downward and forward, the fragments ride over one another, the lower one being drawn backward and upward by the powerful action of the muscles of the calf, the upper one projecting forward.

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* Read before the Plainfield, N. J., Medical Association, April 6, 1897.

The greatest difficulty in the treatment of this fracture consists in keeping the fragments in apposition.

A source of great danger is from a detached fragment of bone. If not removed at once it will act as a foreign body, leading to suppuration.

In the first two cases reported the loose bones were left in the leg until after suppuration became extensive; then, in defiance to the powers of antiseptics, thorough drainage, wiring, and suitable splints, the suppuration increased, until a general sepsis indicated the necessity of an amputation, in each case, to save their lives.

In order to learn more of the treatment of these cases, I formulated two questions and submitted them to three men of national reputation.

1. Does not the wiring of the fragments to obtain coaptation and fixation give the best results in cases of compound fracture of the leg?

In answer to this question Dr. Robert F. Weir writes: "It does not; wiring is exceptional."

Dr. William T. Helmuth answers: "If you can properly coaptate the fragments of bone, wiring is not necessary in recent cases of compound fracture. If the bones can not be set, wiring may be resorted to."

Dr. J. William White answers that he only wires in cases of compound fracture under very exceptional conditions, and adds: "I regard the wiring of joints, for purposes of fixation, as in the majority of cases a very unsatisfactory procedure."

2. If in a case of compound fracture of the leg suppuration begins before the tenth day, or before the exudation of callus, is not an amputation the usual result?

Dr. Weir answers: "No; attempts to save the limb are generally successful."

Dr. Helmuth answers: "Even where suppuration begins before the tenth day I have seen perfect union result; the provisional callus takes longer to surround the bone, but amputation is by no means in my hands the usual result."

Dr. White answers: "Suppuration does not preclude the possibility of bony union, but it of course renders it much more improbable. I have seen good union occur in the presence of considerable suppuration from the surrounding structures."

The result of this correspondence is that all agree that wiring the bone is the exception rather than the rule; that it is indicated in those cases only where the fragments can not be set; that suppuration does not preclude the possibility of bony union, although it renders it more improbable, and that it does not usually result in the loss of the leg.

In conclusion, allow me to state what I believe to be the best treatment of this fracture.

As soon as possible after the receipt of the injury administer an anæsthetic, and, after observing thorough antisepsis, enlarge the external wound by a longitudinal incision. You are now prepared to thoroughly examine the wound. All fragments of bone, pieces of dirt, or foreign bodies must be removed, bleeding vessels must be closed, and, finally, if the bones can not be set, wiring should be done, because of the absence of any better means of holding the fragments together. The leg should then be placed in a well-padded fracture box.

ULCERATING NÆVUS OF THE LIP IN A CHILD PRODUCING HARELIP. SPONTANEOUS CURE.*

By W. J. BRANDT, M. D.,
BROOKLYN.

The patient in this unique case is now seventeen months old. At the birth of this child a very superficial-looking nævus was observed over the left side of the upper lip, extending from the nose to the vermilion border. Twelve days after birth the nævus became darker, thicker, and began spreading rapidly. It soon began to involve the mucous surface of the lip and a nodule began to appear on the cutaneous surface of the nose. The nævi of lip and nose grew daily in size, until the child soon presented a most disagreeable appearance. At this time the child was very irritable, although no other systemic symptoms were observable.

Twenty-one days after birth, from the nævus getting softened and sloughy and child crying, the lip divided and a disgusting sloughy acquired harelip resulted. There was no hæmorrhage at the time of the separation. The division of the lip extended up to the nasal fossa and was absolute, excepting a threadlike portion of deep tissue close to the nose. This thread of tissue remained and was quite an aid in the subsequent cicatrization and cure. The edges of the harelip were for many weeks ulcerated and sloughy, and the discharge at times was offensive. The edges of the fissure from this time on became very much thickened, a condition which has persisted more or less until the present.

Two months after birth the edges of the fissure became clean and assumed a healing appearance. From this time the closure has been fairly rapid and complete, and the cicatrization of the nævus tissue, it is even now apparent, is reducing the fissure more, and also the thickened sides of the fissure back from the part that united. The mother nursed the child until she developed an abscess of the breast, and then we were compelled to resort to a diet of condensed milk. The ulceration of the nævus at the height of the process extended up into the nostrils, close to both sides of the sæptum nasi, and at times it seemed as if the cartilage could be seen. The only treatment this case has had has been an application of the actual cautery to the nodule that was situated on the cutaneous surface of the nose, and to the thickened parts back from the edges of the fissure. The result of this application was very good, the nodule on the nose entirely disappearing.

While the artificial harelip was present the edges of the fissure were kept moistened with olive oil, and in the beginning, when the discharge from the nose was offensive, the parts were syringed with witch-hazel.

There being no occasion for hurry, I am waiting until Nature stops, as I wish to see how complete an obliteration of the nævuslike tissue will occur.

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* Read before the Society of the Alumni of the City (Charity) Hospital, March 10, 1897.

RHEUMATOID ARTHRITIS.

WITH REPORT OF A CASE.

By CUVIER R. MARSHALL, A. M., M. D.,
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ONE of the most intractable diseases which the general practitioner occasionally encounters is that known as rheumatoid arthritis, which is characterized by changes of an inflammatory and degenerative nature in the structure of the smaller joints, particularly, with subsequent deformity and limitation of function.

Among the various names by which this disease has been designated, the most common are rheumatic gout, chronic rheumatic arthritis, nodular rheumatism, dry arthritis, arthritis pauperum, arthritis deformans, and general and partial chronic osteo-arthritis.

Flint objects to the use of the term "rheumatic gout" on the ground that it implies that the disease is a combination of rheumatism and gout, while it is quite certain that it has no relation with gout.

The morbid changes involve all the structures which compose the affected articulations, each one showing eventually some evidence of chronic inflammation. While a detailed discussion of the pathology of this disease can not be undertaken in a paper of this character, it may be well to consider a few of the most important morbid changes with their clinical manifestations, in order to refresh our memories on the diagnostic points of the malady and also to emphasize the value and importance of any mode of treatment which will bring about the slightest degree of improvement, or even arrest the progress of the disease.

Usually the metacarpo-phalangeal articulations are first affected, in contrast with the primary invasion of the metatarso-phalangeal articulation of the great toe, in gout. The disease then extends to the wrists, elbows, and shoulders, and, if the feet are also included, to the ankles and knees. According to Howard, of Montreal, the knees are especially liable to invasion. In the early stage there is some effusion into the joints; the periarticular tissues are thickened, and in the large joints distinct fluctuation may be noted. The pain is generally severe, particularly at night, and is more or less constant. The appearance of the joints is changed, partly by the presence of the effusion, the changes in the periarticular structures, and by a spasmodic retraction of the neighboring muscles. As the disease progresses, further deformity is produced by the absorption of the articular cartilages, thickening of the ends of the bones, stretching of the ligaments, etc.; the joints become stiffened; cramps occur in the muscles of the affected limb; grating noises may be heard on movement of the joints; and eventually a pseudo-ankylosis is produced in the smaller articulations of the hands and feet.

The ætiology of rheumatoid arthritis is somewhat obscure. Eminent neurologists have pointed out the fact that arthritic lesions are due to disease of the cord and injuries of nerves. Heredity seems to exercise but little influence, although certain writers (Charcot and Besnier) state that articular rheumatism, either acute or chronic, in parents, predisposes to rheumatoid arthritis in their children; yet, strange to say, it is well known that acute articular rheumatism rarely if ever passes on to rheumatoid arthritis. In those cases in which such a sequence seems to occur, the primary disease most probably was the initial form of rheumatoid arthritis. Scrofula and phthisis are said to occasionally antedate this affection, and women are more apt to be its subjects than men are, it occurring after frequent pregnancies and prolonged lactation. Cold and dampness, and especially residence in damp places, are favorable to the development of the disease, particularly in the partial form. The evidence, in general, is unquestionably in favor of some relation of this disease to rheumatism. The subjects are usually those of the rheumatic diathesis, and it is possible that certain exciting causes, acting through the nervous system, determine the nature and extent of the disease.

The diagnosis involves the differentiation of this affection from gout and rheumatism. Before the characteristic deformities develop, it is difficult to distinguish it from the latter disease, especially if it is of a chronic type, from the onset. In gout the internal metatarso-phalangeal articulation is generally the site of invasion, while in this disease the hands, or even the larger joints, are primarily attacked. Even in chronic gout there is a history of acute paroxysms, often following errors in diet, while rheumatoid arthritis is generally subacute from the beginning. In chronic rheumatism the articular cartilages are not absorbed, and the ends of the bones do not become enlarged, with attendant deformities, as is the case in rheumatoid arthritis. The deposits of sodium urate in gout appear as rounded swellings in the vicinity of the joints, and do not seem to involve their structure; they are soft at first, and generally they can be moved slightly in a lateral direction, while the nodosities in rheumatoid arthritis are of stony hardness, and as they are real osseous formations on the articular surfaces of the bones, they are immovable.

The prognosis is in general uncertain. Many cases progress to a condition of hopeless deformity and consequent helplessness, although the general health may not be seriously impaired, and death may take place from some intercurrent affection. In others the deformity and impairment of function are limited in degree. The prognosis is not unfavorable in those cases in which the condition receives early recognition before the permanent lesions have developed.

Inasmuch as this disease generally occurs in those who are the subjects of a diathetic condition, in which anæmia and other factors which tend to depress the general health play an important rôle, measures which deplete the economy should not be employed. The important point is to recognize the disease in its early stage, before the characteristic deformities have become established, when its progress may be arrested, and even a cure is possible. The remedies which deserve honorable mention are iron, arsenic, and cod-liver oil. Iron is especially indicated in those cases in which anæmia is present, and the salt most likely to be of benefit is the iodide. Iron and arsenic may be given, in combination, in capsule or pill—as, for example, one or two grains of ferrous iodide (FeI_2), and one thirtieth to one twenty-fourth of a grain of arsenic iodide may be administered thrice daily, with oleum morrhuæ in moderate quantities, so as not to disturb the digestive apparatus. The salicylates accomplish little, as they are apt to become intolerable, especially in chronic cases.

In view of the fact that the successful management of advanced cases of rheumatoid arthritis involves the use of methods and appliances not usually at the service of the general practitioner, they are best cared for in the modern sanatorium or hospital, where the daily routine can be systematically and persistently carried out; since the faithful and unremittent use of electricity, massage, hot baths, diet, and passive exercise of the joints will work wonders in many cases without recourse to medicines. The hot air or Turkish bath is not as useful as the thermal or electro-thermal bath, at a temperature not above 98.5° F. Warm wet compresses locally, and rest during the acute exacerbations, are indicated, and after the latter have subsided, passive motion of the affected joints is necessary to preserve their function. The application of the electric current, both the galvanic and faradaic, is a useful adjuvant to the general treatment, while either or both of these currents may be used in connection with the thermal bath.

The use of mineral waters deserves some consideration at the hands of the profession, as conclusive evidence of the beneficial action of these waters is to be had from observation in selected cases, notwithstanding the prejudice which exists in the minds of many physicians against their use on the ground of inefficiency. In conjunction with the treatment outlined above, the free use of a mild mineral water is more apt to be beneficial than otherwise, while strong alkaline waters should be avoided. In the selection of a mineral water some attention must be given to the condition of the gastro-intestinal, cardiac, and renal systems. The diet should be generous and nutritious, it being unnecessary to restrict the amount of nitrogenous food; in fact, in most of these cases the debility is so pronounced that nitrogenous food is positively indicated, particularly if there be no special contraindication for its use. In some cases the use of a predigested food may assist materially in building up the broken-down system.

In conclusion, I desire to report briefly a very interesting case of this affection to which my attention has been recently directed. It is all the more interesting because a vast improvement in the patient's condition took place after the establishment of marked lesions and years of suffering and helplessness; it also illustrates the happy result of the persistent use of a very simple remedy, to the entire exclusion of every other form of treatment usually deemed necessary.

William H. R., aged fifty-three years, a resident of Cape May, N. J., was seen by myself on March 19, 1897. An inquiry as to his previous history elicited the statement that he had had repeated attacks of rheumatic pains for a period of twenty years, which first appeared in the left shoulder while he was in the Government service during the late rebellion. Ten years ago the disease assumed a severe form, invading the small joints and the knees principally. These joints became gradually enlarged, the pain was excruciating, necessitating the use of morphine to afford relief, and gradually and progressively the characteristic deformities of rheumatoid arthritis were established, until finally he became a helpless, bedridden invalid. Medicinal treatment was of no avail, and his physicians eventually became discouraged and ceased to attend him. About four years and a half ago he presented himself at the hospital of the University of Pennsylvania for treatment, where he was examined by several physicians, notably Dr. William Pepper and Dr. Judson Daland; he was also the subject of a clinical lecture by Dr. Pepper. Naturally at that stage of the disease an unfavorable prognosis was given, and he was advised to return to his home. At the time of his visit to Philadelphia he was still able to go about on crutches, but after his return home he became more helpless, until finally he was confined to bed, and was unable to move hand or foot.

In the summer of 1896 a friend advised him to try a mineral water, the Rennyson Tredyffrin lithia water, from a spring in Tredyffrin township, Chester County, Pennsylvania, in the hope that he might derive some benefit from its use. He began drinking the water systematically, having discontinued all other treatment, except the nightly use of morphine. Gradually the pain disappeared; the swelling in the knees and hands began to subside, and in a short time the use of the morphine also was discontinued. He had been a helpless, pain-racked sufferer for many years, so that the improvement in his condition seemed marvelous and excited the notice of his neighbors and friends. The joints had been so rigid and the pain so great that voluntary motion was impossible; even food was administered by an attendant. The bowels, which previously had been obstinately constipated, resumed their normal daily action, and sleep became quiet and natural.

At the time of my visit I found the patient seated in a wheel chair, which he was able to move about the room by the use of the hands. His general condition was excellent, the tongue was clean, the pulse regular and moderately full, and all the bodily functions were apparently normal. He was entirely free from pain, and had been so for months. The knee joints were enlarged, but movable, extension being possible to about a hundred and twenty degrees, further extension seeming to be limited by the retracted flexor tendons of the thigh. The fingers were freely movable in almost all of the articulations, although complete flexion could not be obtained on account of the characteristic enlargement of the heads of the bones, which was quite perceptible. There was no evidence of gout, either in the vicinity of the joints, in the cuticle, or the helix of the ear. There was no œdema of the lower extremities, and the ankles and feet were not swollen. The patient stated that he expects soon to get about again, on crutches at least, if the improvement continues as it has the past few months.

In order to verify the previous history of the case, I called upon his family physician, Dr. Virgil Marcy, who corroborated the statements of the patient in every particular. He also stated that no remedy which he had prescribed had exerted the slightest influence upon the progress or severity of the disease, while for the past few months the improvement in every respect has been gradual and continuous, all of which he thinks is due to the action of the lithia water. There has never been any evidence of cardiac or renal disease, but the patient exhibits some pallor of the skin and coldness of the extremities, evidences of anæmia.

What seems most remarkable in a case of this kind is the fact that while none of the usual remedies seemed to have the slightest effect, the severe pains and the immobility continuing to grow more pronounced, yet under the influence of so simple a remedy marked and rapid improvement followed. I have been led to report this case simply in an honest desire to state facts as I observed them, further comment seeming to be unnecessary, as I have already exceeded the intended limit of this paper.

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HEADACHE IN EPILEPSY.

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Among the post-convulsive phenomena in epilepsy, one which is not of the least important symptoms is the headache. This symptom is almost invariably present, and is described by the sufferer in various ways, but is almost always consigned to the same region of the cranium—namely, the frontal. Of course, this symptom of headache in epilepsy is not meant to include those affections preceding, concomitant with, or following a fit, which are of a decided neuralgic or megrimous character. Such latter-named conditions have been frequently commented upon by such neurologists as Dana, Gray, Féré, and Esquirol. They have been found to be associated with epileptic fits, and are a true part of the nervous discharge, the sensory phenomena of the attack.

When we come to consider the reason for this post-convulsive sequelæ of headache we find many theories present themselves, but as yet they are all of such a distinctive theoretical and hypothetical nature that but little can be gained in detailing them at length here; therefore we will only make mention of the principal features of each theory.

Although headache in most affections is still a great mystery, yet it would seem that its occurrence would be more easily explainable when following an epileptic fit than it would be under most other conditions. The nerve fatigue or exhaustion resulting from such extreme discharge or liberation of energy in the cortex as is seen in an epileptic attack is a sufficient explanation for the condition, although we are aware that some physiologists state that no headache can be produced or have its origin in brain substance, and many psychologists state that all sensations must have their origin in the periphery. Against this first-named objection it can be said that we frequently see headache following simple brain fatigue from overwork, which must be due to the exhaustion of the nerve centres engaged in such excessive mental activity.

It is well known that the interdependence of the vascular supply to the face and the brain or meninges is no longer closely related, and that the congestion of the face does not necessarily imply a cerebral congestion. Again, it is hardly possible that the products of the nervous overaction may have served as an auto-intoxicant upon the individual nerve cell, which some writers state is incapable of receiving its normal blood supply and eliminating its excess waste products in the fit, although this may also act as a deterrent to the nerve cell's refortifying itself, and thus prolong the symptom, headache. It is interesting to note that those epileptics in whom little or no sleep stage is present after a seizure, are troubled to a greater extent by headache than those who have a prolonged sleep. Headache is also most noticeable and severe in those cases which have the greatest convulsive movement in the fit, and the condition is most easily relieved by those drugs, such as opium and morphine, which exert a very favorable influence upon fatigue induced in other parts of the body. However, the symptom is best treated without such drugs, but by milder remedies which induce sleep, and the sleep thus acts as a natural restorative. For this reason, as well as for many others, every epileptic should be earnestly persuaded to sleep after his attacks. Many post-convulsive phenomena, such as automatism, delirium, and even epileptic insanities, are brought on or hastened by well-intentioned friends, who desire to arouse and awaken the patient before he has slept off the effect of his attack. A much more cautious prognosis should be made in any case of epilepsy in which the sleep stage is habitually omitted, and in which the patient is constantly afflicted with severe frontal headache.

ATONY
OF THE RECTUM AND ANAL SPHINCTERS:
ITS ÆTIOLOGY, PATHOLOGY, DIAGNOSIS, AND TREATMENT.

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This subject is one of such general interest that the writer feels that no apology is necessary on his part for selecting it for discussion on the present occasion. Atony of the rectum is not an uncommon disease, and it is especially very interesting from the fact that it is not generally well understood, being almost always confounded with what is commonly called *constipation*, a term which, however, does not designate any disease whatever;

neither can it be so considered or construed, for the word simply signifies the impaction or repletion of fæcal matter in the rectum, or in any other part of the intestines, and is solely a cause of the disease in question by the superdistention or dilatation of the walls of the organ which such impaction or repletion of fæcal matter induces; the word *constipation* can, therefore, only represent a cause or an effect of atony, but not that disease itself. Indeed, in this instance, the cause, the effect, and the disease will be found singularly confounded, as will be shown.

Atony of the rectum, as its name implies (Latin, *atonia;* Greek, ἀτονία; from α privative, and τόνος, tone), consists essentially in the loss to a greater or less degree of the tone or contractile power of the muscular coat of the organ. It is not, strictly speaking, either *asthenia* or *adynamia,* as some authors have named it, for it does not interfere seriously with the functions of the organ, as these terms seem to imply, no permanent or irreparable injury being done, in such instances, to the muscular fibres themselves by their distention; neither is it a true paralysis, such as occurs in paraplegia, but merely a local impairment of muscular contractility.

Comparatively but few authors have especially written upon this affection as *rectal atony,* while numerous authorities have treated the subject under the denomination *rectal constipation.* Now it is evident that these names can not be substituted, the one for the other, one designating disease, the other not. Some few authors who have noticed the subject denominate it, severally, *constipation, distention, dilatation,* or *relaxation* of the rectum. But all these terms are employed in a very loose and bungling manner, and this simple circumstance alone shows that the subject has not been well studied; indeed, these terms are entirely too vague and too indefinite to denote the true nature of the malady; they merely indicate the cause or the effect, but not the real affection itself; hence they are all misleading.

With regard to the word *constipation,* it is derived from the compound Latin word *constipo,* formed from *con,* together, and *stipo,* to cram, or to fill up close. The corresponding term *obstipato,* by which a form of costiveness is frequently described by Latin authors, is from *ob,* and *stipo,* to obstruct, hinder, or stop up. The true import of the word constipation would therefore appear to be a mere collection or impaction of excremental matters in some part of the intestinal canal, the residuum of the various processes concerned in alimentation. It is obvious, therefore, that constipation can not be considered a disease, being, as it were, a mere collection of impacted fæcal matter, but it is often the cause or the sequel of serious disease.

It may be observed here that the principal point and the greatest difficulty in scientific practice are to discriminate accurately between the causes and the effects of disease, for it is only by the removal of the former that we can expect effectually to counteract the operations of the latter.

The habitual neglect to attend strictly to the calls of Nature in regularly emptying the rectal pouch is doubtless often a remote cause of the atony of its walls, for in such instances the consequent result of this neglect is the accumulation and impaction of the fæcal matter in the cavity of the organ, which may, in order, be considered the approximate cause; while the superdistention or dilatation of the parietes of the organ by such repletion is the direct or immediate cause of the atony or loss of power in it; and it may be observed, too, that in such cases the protracted presence of the indurated fæcal matter obtunds the organic sensibility of the rectal pouch, so that it sometimes requires something more than the mere rectal repletion itself to stimulate it to the expulsive effort.

This defect of muscular power in the rectum, the result of prolonged distention of its walls, is similar to that familiar condition which takes place in the bladder when the calls to empty it are postponed too long; in this case the organ will not respond when the effort is made to relieve it, so that catheterism must be resorted to should simpler means fail.

The distention of the rectal pouch by the impaction of fæcal matter may on the contrary, however, be the sequel or effect, instead of the direct cause of the atony; as when some other cause has previously produced it. In such a case the repletion of fæcal matter is suffered to take place because the organ is powerless to completely expel it; as, for example, atony or the loss of rectal power is often caused by the long and continued pressure of the head of the child upon the inferior portion of the rectum during a difficult and protracted labor. The writer has observed a number of such cases, and they are quite familiar to gynæcologists, and are sometimes difficult, if not impossible, to entirely relieve; he has seen some such cases in which for months or for years after the accident the patients had not the power to expel indurated fæces without a resort to artificial measures. It is also well known that atony of the rectum is sometimes produced by the pressure upon the organ of ovarian tumors, uterine fibroids, uterine displacements, and the gravid uterus. Now, it is obvious that we can neither appreciate rightly nor treat successfully the rectal atony in such cases without first also taking into consideration for treatment those primary and correlated affections of the genital organs themselves.

In certain conditions of the stomach and bowels there is often an excessive quantity of gas generated, which accumulates in the colon and rectum, and of itself, independent of fæcal impaction, causes constant distention of these organs, and thereby produces atony of the same. Indeed, the writer must not omit mentioning here that the abuse or the too frequent use of effervescing or gaseous products, such as some mineral waters, or other waters charged with gas, etc., is also fraught with mischief, by the gas producing constant undue distention of the walls of the intestinal canal, more especially in the colon and rectum, into which it so readily passes, and in which it is more or less detained, and thus induces the disease in question.

Now, as to the terms *distention*, *dilatation*, or *relaxation*, it is evident that each one, like *constipation*, can only be properly used to designate the cause or the effect, as may be, instead of the atony itself. An evidence of the improper use of the term *constipation* to designate atony of the rectum will at once appear by the manner in which it was used by the distinguished M. Brétonneau, of Tours, France, who was the preceptor of the two preeminently great men of our profession, M. Trousseau and M. Velpeau, and who a number of years ago met with many cases in which he found "great dilatation and torpor of the rectal pouch, forming as it were a greatly enlarged place for the lodgment of fæcal matter, which sometimes accumulated in it to such an extent as failed to be expelled by the natural efforts." This plainly described atony of the pouch of the rectum he called *rectal constipation*, and astonished his contemporaries by the recommendation of powerful tonic and astringent injections into the rectum, remedies such as are usually employed in diarrhœa, etc., instead of the active purgatives generally used to cure constipation. But viewing the disease as atony, and not constipation so called, the tonic and the astringent injections of M. Brétonneau were both highly proper and rational, as will be shown. Constipation, as it is called, has generally been attributed to torpor of the liver, and the most active concentrated cathartic remedies, in the form of pills, etc., were employed to arouse the indolent organ; whereas, on the contrary, in the affection under consideration, the torpor is in the rectum itself and not in the liver, and can be relieved by much milder, safer, and more certain means. The writer himself has often witnessed great suffering from the indiscriminate and the "infelicitous" administration of drastic purgatives in such cases.

Thus far the writer has been explicit upon several points, perhaps to prolixity, but he has found great discrepancy in the descriptions of various authors regarding this malady. Indeed, the loss of tonicity or defective muscular power in the rectum, especially in its pouch, rendering it incapable of properly expelling its contents, is, to repeat, of much more frequent occurrence than is generally believed, and is doubtless often overlooked and diagnosticated as constipation of the bowels merely, and treated as such by purgatives. It is, however, an affection which is attended by much distress, inconvenience, and trouble, and is apt, unless relieved, to result in serious injury, not only to the rectum itself, but also to those organs in its immediate vicinity; indeed, whether the atony is due originally to the distention of the rectum by impacted fæcal matter, or to some other cause, it can not continue long without also seriously affecting the muscular contraction or movement of the organ.

Some of the Causes and Symptoms.—To enter fully into the causes, symptoms, rectal reflexes, and sequelæ consequent upon this pathological condition of the rectum would far exceed the limits of this article. A few observations, however, upon the most common causes and sequelæ of atony of the rectum, in addition to those already given, will be considered.

The most common remote cause of atony of the rectum is, perhaps, the habitual disregard of the calls of Nature to relieve the organ, as previously remarked. It is demonstrated by the anatomy and the physiology of rectum and anus that Nature has designedly made provision for the accumulation as well as the retardation of the fæcal matter in the rectum by furnishing this organ with a pouch or ampulla, and its extremity with a muscular mechanism in subjection to the will, for the purpose of opening and closing it. This controlling and restraining power, when properly and duly exercised, is highly essential to our comfort and convenience, but when it is abused, in order to postpone or to set aside the admonitions of Nature, so as to retain the excremental matter beyond the period when Nature calls for its expulsion, serious consequences, sooner or later, will inevitably ensue.

It may also be proper here to remark that not an infrequent cause of atony of the rectum is that some persons, especially females, are in the constant habit of daily using warm or hot water injections into the rectum, for the purpose of evacuating this sometimes torpid organ; by continuing this pernicious practice the rectum will soon be deprived of all normal power of evacuation by its own efforts. It must be obvious to all experienced practitioners that the continued employment of either warm or hot water enemata for the purpose of daily relieving the bowels is injurious; for, while it is true that by their first impulse they induce the peristaltic action, their reaction, however, is always followed by the muscular fibres being left more or less softened, relaxed, and deprived of their contractile power. These objections do not apply to cold-water injections at the ordinary temperature; therefore, if such persons are compelled to use enemata in these instances, they should employ cold water instead of warm or hot water, by which they would more easily attain the end they have in view, and thus increase the tonicity of the muscular fibres of the rectum, and avoid the injury of diminishing more and more every day the contractile force of those fibres; for it is known to be an established fact that the reaction of cold water leaves the muscular fibres of the rectum more vigorous, more natural, and more effectually disposed to peristaltic action; whereas the reaction of either warm or hot water leaves the muscular fibres of the organ relaxed and enervated; consequently, neither warm nor hot water injections should ever be used in atony of the rectum, as their tendency would be to induce the disease instead of curing it. But the abuse or the too continued use of large cold-water injections may also produce atony, as they, by their large quantity or bulk, unduly dilate the walls of the rectum and thus impair the power of its muscular coat. The very fashionable and frequent "flushing" of the colon, as it is called, by injecting into the bowels several gallons of water at a time, is a most pernicious practice, except in some serious disease, as many have found to their grief.

Symptoms.—Some of the most prominent symptoms of atony of the rectum may be summed up as follows: There is generally experienced, in confirmed cases, a sensation of fullness or weight in the rectum and a frequent desire to stool, but an evacuation, even if effected, does not altogether appease the desire, but leaves an uneasy feeling, as if some fæcal matter still remained, without sufficient power, however, to expel it; defæcation is sometimes attended with tenesmus and forcing pains and a discharge of mucus streaked with blood, or a discharge of fluid fæces, which may have passed by a fæcal bolus, lodged in the rectal pouch, and which may lead to an erroneous diagnosis of diarrhœa. In some of these cases the pouch of the rectum becomes dilated to an almost incredible extent, and filled with fæcal matter, so that this distended viscus will sometimes be found to occupy a large space in the pelvis; while at the same time the organ makes but little or no effort to dislodge the accumulated mass; if the finger or the bougie is now introduced *per rectum* it will readily encounter the rectal bolus, and at once determine the nature of the case. The bladder, the urethra, and the other contiguous organs often participate in the irritation produced. In men the prostate gland and the bladder become affected, and in women uterine irritation and frequent micturition are the results. In such cases, whenever the rectum is completely evacuated, there is often experienced a distressed feeling of weakness in the loins, and of a sinking sensation, with a want of the usual muscular tension, until the organ again becomes moderately replenished. On a specular examination of the empty rectal pouch in the worst cases it will be found abnormally enlarged and presenting a smooth membranous bag, from which it would be difficult to expel indurated fæcal matter by the natural efforts. In some instances, however, the pouch will be found to be partially filled with enlarged folds of loose mucous membrane, which, during defæcating efforts, sometimes pass down into the fossa between the internal and external sphincters of the anus, blocking the narrow canal and impeding the evacuation of the fæces, and also, to some extent, forming an impediment to the introduction of instruments and enemata. This morbid condition of the mucous lining is doubtless the result of a neglected state of the bowels. Indeed, this affection, if neglected or mismanaged, not only may give rise to internal prolapsus recti, but also to an intussusception of the superior and undilated portion of the rectum into the dilated pouch of the inferior portion, and it may also give rise to a painful contraction or enlargement of the anal sphincters.

Atony of the rectum and colon is most commonly met with in delicate women of a lax muscular fibre, and in those whose sedentary occupations lead to a neglect of the necessary measures to insure regularity of the functions of the organ. It is also frequently met with in delicate children.

Treatment of Atony of the Rectum.—In the treatment of defective muscular power of the rectum it is of importance not only to be able to recognize the true nature of the malady, but, above all, to know also the most rational and effectual measures for its relief. The first consideration in the treatment of this affection is to enjoin a strict observance of regular habits regarding a daily evacuation of the rectum, and this desirable object in mild cases may be aided and often attained by simple means, such as the injection of from half to a pint of cold water of the ordinary temperature into the rectum at the regular time of going to stool every day. This constitutes a most valuable remedy in atony of the rectum. Cold, being tonic, stimulant, and astringent, acts somewhat similarly to nux vomica by exciting the sensibility and contractility of the organ, but it should be discontinued as soon as the object of its use has been attained.

In the more obstinate cases, however, the chief remedies should be nux vomica alone or combined with some other ingredients, together with the employment of rectal injections composed of powerful astringents and tonic substances, with the intention of producing contraction, corrugation, and condensation of the relaxed and weak muscular fibres of the rectum, by which they become shorter, stronger, and firmer, and thus aid in diminishing the morbid organ to its normal dimensions and tone.

The exhibition of proper aperients, as adjuvants, is indicated in some of these cases, and can not be dispensed with, especially when atony of the colon exists with that of the rectum. But drastic purgatives should not be used, for they, as a general rule, do more harm than good in such cases. The smallest dose of an aperient should be given, so as to gently rouse the normal peristaltic action, and its use continued only until a habit of daily evacuation is induced. The object is by no means to excite watery stools, but to induce, as much as possible, an imitation of the normal action of the bowels; indeed, the best and only method of maintaining a regular action of the bowels, after the habit has been re-established, is to compel them, if possible, to perform their own legitimate work, by withholding aperients, as well as all other artificial means generally used for this purpose. With regard to the ingredients composing the astringent and tonic injections to be used in the treatment of atony of the rectum, such substances abound, and may be varied indefinitely by the practitioner. These injections should not exceed in measure more than five or six ounces, and should not be administered until the rectum has been previously emptied of its fæcal contents by a proper enema or an aperient. The astringent injection should at least be given once daily and retained for a few minutes, if possible, but if it can not, and is passed at once, it will nevertheless do good. In obstinate cases it may be of advantage to add from a half to a grain of nux vomica to each injection.

The writer has used with good results in some of these cases the decoction of galls, as well as a strong decoction of white-oak bark and alum. He also used the following:

℞ Acidi tannici.................... gr. xxx;
Vini rubelli...................... ℥ iv.
Fiat injectio.

M. Brétonneau, in order to correct the morbid condition of the rectal pouch in these cases, which he called *rectal constipation*, and which he often found complicated with anal fissure, used with signal success, according to the testimony of his distinguished pupil, M. Trousseau, the following injection, which not only restored the organ to its normal action, but also cured the anal fissure when both affections coexisted:

℞ Ext. rhataniæ...................... ʒ ij;
Spir. vini rectificati................. ʒ v;
Aq. destillatæ....................... ℥ iv.
Fiat enema.

The writer has employed the injection of Brétonneau with success in a number of cases, and among them several children, in which about one fourth of the quantity was injected.

In some of these cases, the following pill, or a somewhat similar one, may be used with good results, especially if atony of the cæcum exists with that of the rectum, so as to excite the peristaltic action and soften, if possible, the indurated fæcal matter in the former, as it can not, in its entirety, be so easily reached by injections. These pills produce an easy evacuation. One pill should be taken daily at dinner or at bedtime:

℞ Ext. aloes........................ gr. xxx;
Ext. nucis vomicæ................ gr. xx;
Ext. hyoscyami................... gr. xv;
Sulph. ferri......................... gr. x;
Ol. caryophylli.................... gtt. v.
Fiat massa in pilulas xxx dividenda.

The extract of nux vomica may also be given alone with advantage once daily, as a pill of from half to a grain. The inspissated ox-gall is also valuable.

Case.—The writer will here give an interesting case of atony of the cæcum coexisting with that of the rectum, in which these organs were found impacted with large collections of indurated fæcal matter, and which seemed to indicate some serious chronic disease in the right ilio-inguinal region.

Mr. J. R., of New York, of a bilious and nervous temperament, consulted the writer in 1890. He said he was suffering from an almost constant dull ache in the right groin, which he was told indicated appendicitis, and that he discharged much turbid and offensive urine, which he feared denoted Bright's disease of the kidneys; and, said he, "Doctor, with appendicitis upon the one hand, and Bright's disease upon the other, I feel and fear that I am between the devil and the deep sea." He also said that he suffered much from obstinate constipation of the bowels, frequently having no evacuation for three or four days, and, being a strong believer in homœopathy, he had declined to take purgative medicine for their relief. It was soon made evident, however, that all the afflictions of Mr. R. were the result of atony of the cæcum and rectum, together with the injurious effects of the long retention and distention of the impacted fæces in these parts of the large intestines. By careful palpation of the right ilio-inguinal region, and when directly over the cæcum, a decided fullness and hardness or firmness were detected, with some unevenness of surface; upon firm pressure there was, however, but little soreness complained of. Nothing abnormal could be detected directly in that now much-dreaded and fearful locality, the *appendix cæci*. The *ensemble* seemed, therefore, to indicate the commencement of some serious chronic affection, especially of the cæcum; and while reflecting upon the obstinate confinement of the patient's bowels, the idea occurred that it might be atony of the cæcum, as well as of the rectum, caused by cæcal impaction or repletion of fæcal matter; and, acting upon this impression, the patient was at once directed to take three ounces of castor oil in the morning, on an empty stomach, and, should the oil fail to act in three or four hours, to repeat the dose, and in the mean time to remain in the house and wait for events. The result was, that in ten hours after taking the oil his bowels were completely relieved of large quantities of indurated and offensive fæces. This somewhat obscure case was now made clear by the entire absence of the abnormal fullness, hardness, and unevenness of the cæcal region, as well as the dull ache complained of in the same locality. In order to prevent a similar recurrence and to cure the affection, the aperient pills described above were used by the patient for some time with the most happy results.

Galvanism.—In atony of the rectum galvanism may also be employed. A properly directed current to the seat of the affection might stimulate the coats of the rectum to such an extent as to aid in restoring their lost tone and action, and thus ultimately produce normal muscular contractions.

Mechanical Removal of Impacted Fæces.—In cases in which the rectum or rectal pouch is firmly distended and blocked by a large, hard fæcal bolus, or by a large, pulpous, and tenacious mass, which neither purgatives nor stimulating injections will have any effect toward softening the former nor of dissolving and removing the latter, the only remedy in such cases is the employment of mechanical means. After dilating the anal sphincters well, under etherization if necessary, the fingers, with the aid of the rectal curette, should be used to break up and remove as much of the impacted mass as possible, and the remaining fragments should then be completely washed out by stimulating injections. Mr. John Woodall, an English surgeon, two centuries ago invented a rectal scoop or curette for removing and cleansing the rectum of hard or soft or tenacious fæces, which he called *spatula mundani*, or *mundator ani*.

To all these means, in the treatment of atony of the rectum, must necessarily be added as auxiliaries, a proper tonic diet, claret wine, active exercise in the open air, on foot, horseback, or bicycle.

Atony of the Anal Sphincters.—The loss of tone of the sphincters of the anus, like that of the rectum or rectal pouch, and from somewhat similar causes, sometimes occurs, and consists of the loss of power to some extent of their muscular fibres. In such cases, although the sphincters lose a large portion of their tonicity, yet their functional power is not altogether destroyed, as it is in paralysis the result of paraplegia, in which both their grasping and retentive functions are entirely lost, so that the dejections, if fluid, will, on reaching the sphincters, escape involuntarily. The anal sphincters are much less frequently the seat of atony than the rectum, but the affection in both may and does occasionally coexist. When the sphincters are affected the disease is more readily detected, being external, but when the rectum is the seat of the affection it is much more liable to be overlooked, being internal.

Atony of the sphinctores ani frequently occurs in old age, and in such cases it is commonly called palsy, or local paralysis. It is a very troublesome and distressing malady, and is often attended by prolapsus recti and eversion of the anus, and sometimes it entirely prevents the aged patient from taking exercise on foot. In such cases, during the treatment, the patient should evacuate his bowels just at bedtime, for if they are emptied in the morning the patient either moves about on his feet or remains in the sitting posture, by either of which, irritation is kept up all day; whereas, when the evacuation takes place at bedtime, the patient remains in the recumbent posture for many hours, and is enabled in the morning to exercise without the parts protruding for hours. This, to repeat, is one of the worst forms of atony of the anal sphincters, if it may in reality be so called, being so closely allied, as it were, to partial paralysis that it is difficult to distinguish between it and such an affection. This form, however, in these cases, is generally without any marked disease in the nervous centres affecting other functions also. Atony of the anal sphincters is often met with in some hysterical women, and also among hypochondriacs, and it occurs sometimes in infancy and childhood.

Ætiology.—Among the causes of this affection may be mentioned exhaustion from protracted ill health; sedentary habits; the immoderate use of alcohol and tobacco; excessive or repeated dilatation of the anus, produced by the straining efforts at evacuation, in chronic dysentery; divulsion of the anal sphincters, either for therapeutical or diagnostical purposes. The affection is sometimes produced by a descent or a prolapsus of the rectum, or by hæmorrhoidal or other tumors of the same, which, by their continued pressure within, and their frequent passage out and in through the anal orifice, impair the contractility of the anal sphincters. It may be observed, however, that in such cases, as a general rule, the removal of the cause will restore the sphincters to their normal tone. Among the most fertile causes of anal atony, according to some authors, may be mentioned *pæderastia*, that shocking vice and unnatural crime of the despicable creatures who trample upon the laws of Nature, and who thus place themselves beyond the bounds of all human society. By the action of the external sphincter the skin of the anus is disposed into radiated plaits, with intervening furrows, which extend some little distance into the anal canal, as well as out on the external surface. In the worst cases of atony of the sphincters these folds or wrinkles almost or entirely disappear, or become effaced; the margin of the relaxed anal orifice will be found loose and salient, so that the finger or bougie can be passed through the anal orifice and into the rectal pouch without meeting resistance. When the atony is the result of the vicious practice the anus is much excavated, as it were, and presents the appearance or aspect of a funnel. In all cases of anal atony there is a slight escape or oozing of fæcal matter for a short time after each evacuation, so that it is almost impossible to observe cleanliness.

Treatment.—In the treatment of the ordinary cases of atony of the anal sphincters the cold ascending douche is a most valuable remedy in restoring their lost tone. It should be applied to the anus forcibly for four or five minutes, immediately after each evacuation of the bowels, and once or twice besides, during the twenty-four hours.

The following ointment or lotion may be used with advantage in such cases:

℞	Sulph. strychninæ	gr. x;
	Ung. aq. rosæ	℥ j.
Fiat unguentum.		
℞	Ext. nucis vomicæ	gr. viij;
	Alcoholis	℥ ij;
	Aquæ ammoniæ	ʒ j.
Fiat lotio.		

Nux vomica, as well as galvanism, should also be employed in atony of the anal sphincters.

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March 5, 1897.

A RARE FORM OF APPENDICITIS.

By CHARLES B. KELSEY, M.D.

THE patient was operated upon within sixteen hours of the first symptoms of the recurrence of appendicitis for the fourth time in six months. His only symptoms were a temperature of 99.5° F., and more than the usual tenderness over the appendix, which could be felt by palpation. There was no rigidity of the abdomen—in fact, no other symptoms than the pain and slight rise of temperature, the pulse still remaining normal.

On opening the abdomen the appendix was easily delivered through a two-inch incision, being very slightly bound down by fresh adhesions. As it appeared outside the abdomen it resembled very closely in size and shape the slightly bent index finger of a long hand. The peritoneal covering was injected and the walls were hard, very tense, and rigid, but there was no indication of gangrene or perforation.

The intention being to invert the stump, if possible, the appendix was cut off half an inch from its attachment, the amputation revealing the fact that the size, shape, and tension of the organ were due almost entirely to its being overdistended with fluid, odorless pus, about an ounce of which escaped. The appendix immediately contracted to the normal size, and on being laid open showed simply a mucous lining resembling ordinary granulation tissue.

The communication between appendix and colon was tightly strictured, so that none of the contents could escape into the bowel.

I have not seen this curious result of catarrhal inflammation of the appendix described in any discussion of the pathological changes caused by the disease up to the present time. Of course it is a thing that we all admit might occur, but its occurrence must be rather unusual.

The broad question which a case of this kind naturally gives rise to is simply this: How often in the pathology of appendicitis does the formation of pus within the appendix precede and occasion perforation and the formation of pus outside of the appendix?

Therapeutical Notes.

The Hypodermic Use of Metallic Mercury.—Under the name of gray oil (*huile grise*), says the *Gazette hebdomadaire de médecine et de chirurgie* for May 16th, various compounds of mercury and fatty substances are used. The dose should not exceed three quarters of a grain once a week. The following are the principal formulæ:

1. (Lang.)

℞ Mercury, Lanolin, } each	3 parts;
Olive oil	4 "

M.

2. (Gay.)

℞ Mercury	20 parts;
Lanolin	5 "
Liquid vaseline	35 "

M.

3. (P. Vigier.)

℞ Purified mercury	3 parts;
Mercurial ointment	2 "
Soft white vaseline	19 "
Liquid vaseline	40 "

M.

4. (P. Vigier.)

℞ Solid white vaseline	5 parts;
Mercurial ointment	2 "
Mercury	39 "
Triturate, and add:	
Solid white vaseline	14 "
Liquid vaseline	40 "

5. (Neisser, Balzer.)

℞ Metallic mercury	20 parts;
Tincture of benzoin	5 "
Vaseline oil	40 "

M.

6. (Thibierge, Balzer.)

℞ Purified mercury	20 parts;
Ethereal tincture of benzoin	5 "
Liquid vaseline	30 "
Solid vaseline	10 "

M.

Radiant Heat in the Treatment of Ulcers of the Leg.—According to the *Lancet* for May 29th, Dr. Colleville, of the Rheims faculty of medicine, treats ulcers of the leg by exposing them to heat. The flame of a Bunsen burner is made to impinge on a square plate of metal that will stand heating, so as to bring it to a dull-red heat, and the ulcer is exposed to the action of the heat at a distance of about ten inches, the rest of the limb being protected with bandages. The temperature at the ulcer is about 113° F., which is easily borne, and the flame is so regulated as to maintain this temperature during the whole exposure, from twenty minutes to an hour. The surface is then found to be glazed over, and large granulations are to be seen through the semitransparent coating. It is thought best to leave the ulcer exposed to the air for some time, and when it is dressed care should be taken that its surface is not touched by the aseptic gauze or other material used. It is said that some improvement is generally experienced by the patient even after the first sitting, and cicatrization is completed in from five to twenty-five applications. In the later sittings, when the ulcer is nearly healed, a more moderate heat may be employed. If gas is not available, the heat of the sun or of a fire may be used. Dr. Colleville attributes the beneficial effect to the combined action of heat, light, and ventilation.

Ichthyol in Ophthalmic Practice.—Jacovidès (*Thèse de Paris*, 1896, No. 122; *Gazette hebdomadaire de médecine et de chirurgie*, May 2, 1897) says that he has used the following formulæ with satisfaction in catarrhal conjunctivitis, phlyctænular conjunctivitis, granular conjunctivitis, purulent conjunctivitis, and blepharitis:

1. Strong emulsion.
   ℞ Ichthyol, } .... equal parts.
   Distilled water, }
   M.
2. Weak emulsion.
   ℞ Ichthyol .... 3 parts;
   Distilled water................. 7 "
   M.
3. Strong ointment.
   ℞ Ichthyol .... 5 parts;
   Vaseline..................... 100 "
   M.
4. Weak ointment.
   ℞ Ichthyol .... 5 parts;
   Vaseline..................... 200 "
   M.

The application of the emulsion, he says, causes a decided injection of the conjunctiva, together with a somewhat intense burning, but at the end of a quarter of an hour the vaso-constrictive action of the drug asserts itself and the pain subsides. The ointments are better borne. In corneal pannus, he adds, ichthyol may be of service in clearing the cornea.

The Internal Treatment of Pruritus.—The *Gazette hebdomadaire de médecine et de chirurgie* for May 30th attributes the following to Brocq and Jacquet:

1. Tincture of valerian, from two to fifteen drops a day.

2. Tincture of belladonna, from five to six drops a day.

3. ℞ Ammonium valerianate...... 1 part;
   Syrup of mint............. 20 parts;
   Linden water.............. 125 "

M. S.: From two to four spoonfuls a day [whether teaspoonfuls or tablespoonfuls is not specified].

4. ℞ Extract of valerian........ $\frac{3}{4}$ of a grain;
   Powdered valerian........ a sufficiency.

M. To be made into a pill. S.: From two to eight such pills daily.

A Wine of Iron and Quassia.—The *Gazette hebdomadaire de médecine et de chirurgie* for May 20th gives the following formula:

℞ Tincture of quassia.............. 30 parts;
Pyrophosphate of iron and sodium 5 "
Malaga wine.................... 1,000 "

M. S.: A tablespoonful before each of the two principal meals.

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TUBERCULOUS DISEASE IN FISHES.

An interesting contribution to comparative pathology, by Professor Dubard, of the Dijon school of medicine, is published in the *Province médicale* for May 15th. M. Dubard begins his communication with the remark that chance often effects more than patient investigation, as is shown by the fact that after several years spent in bacteriological studies of cold-blooded animals he lately had the good fortune to observe a remarkable case of tuberculous disease in the carp. He then goes on to say that he has long been engaged in trout culture in an abundant spring of pure cold water, of a temperature of from 53.6° to 57.2° F., on a piece of property situated near Dijon. In a reserved portion of the stream eight carps, the remnants of experiments in pisciculture, were placed in October, 1895. For two or three years servants had habitually cast into this part of the water courses the dejecta and sputa of a person suffering with tuberculous disease of the lungs and intestines.

At the beginning of the winter one of the carps died, and its condition of putrefaction precluded any examination into the causes of the lesions it presented, but M. Dubard's attention was directed to the state of the remaining carps. Three of the seven were found to have tumors of the flank, and these were investigated jointly by M. Bataillon, M. Tene, and M. Dubard. It was found that the first tumor observed, on February 20, 1897, was as large as a hen's egg and had the consistence of a sarcoma. It was formed at the expense of the kidney. Although readily enucleable in places, it was elsewhere continuous with the sound renal tissue. Microscopical preparations of the growth showed innumerable bacilli which stained like Koch's bacillus. Amid the lumina of the vessels and the connective tissue, both more or less inflamed and invaded by leucocytes, there were the same bacilli, some of them free, but most of them included in phagocytes; at certain points the formation of tuberculous giant cells was readily recognized.

An extensive series of cultures and inoculations was undertaken. The cultures succeeded at the ordinary temperature, about 57.2° F., but they did better at from 69.6° to 80.6°. At from 96.8° to 98.6° their growth was slow and very difficult to start. There is little difficulty, remarks M. Dubard, in choosing a suitable medium for this micro-organism, but its development requires the presence of oxygen. All the cultures produce bacillary toxines identical with the toxines of the tuberculous disease of birds. On cultures that are a little old there are found dichotomous forms, filaments more elongated and flattened and presenting points where the coloring matter accumulates to a degree suggesting the existence of chlamydospores. On solid media, the closer the temperature to 96.8° F., the more does the dry, scaly look of the cultures distinguish them from those of the tuberculous disease of birds and make their characteristics those of a culture of human bacilli. If bouillon is used, whether a pellicle forms or the growth goes on at the bottom of the vessel, the liquid never becomes cloudy. At a temperature of from 75.2° to 81.2° F., which seems to be the best for this form, the cultures begin to grow in from five to seven days. As regards inoculations of animals, M. Dubard can say little, except that in the course of from seventeen to twenty days there was obtained in the frog a "superb" pleural, pulmonary, mesenteric, hepatic, and splenic tuberculous formation. The results obtained with warm-blooded animals the investigators will make the subject of subsequent communications.

The second tumor, examined on April 18th, was also renal, and it showed precisely the same lesions and bacilli as the first one. The third carp, which was not very decidedly affected, was kept with a view to provide against possible failures or obstacles in the investigation. M. Dubard inclines to the belief that the microbe found in these carps is a cyprine variety of Koch's bacillus, and that the trinity of tuberculous disease—of man, of birds, and of fishes—is one fundamentally.

HOT WATER AND ALCOHOL FOR DISINFECTING MIDWIVES' HANDS.

Dr. Ahlfeld, in an article supplementary to his previous writings on the subject (*Deutsche medicinische Wochenschrift*, 1897, No. 8; *Centralblatt für Chirurgie*, May 29, 1897), meets the criticisms of his method made by Löhlein and Poten, and adds that his results have been so good that he feels warranted in recommending the method as the best for practising physicians and for midwives. Dr. R. Wagner, the writer of the abstract of Ahlfeld's article published in the *Centralblatt für Chirurgie*, goes further and recommends it for use in gynæcological surgery. Ahlfeld says that two hundred pupils of a school for midwives have quickly learned to sterilize their fingers by the procedure in question. To facilitate its use in the sterilization of instruments, etc., he has somewhat modified his original midwife's outfit by adding to it two nickel-plated dishes, one for the alcohol, in place of the three-per-cent. solution of carbolic acid previously employed, and the other fitted with a spirit lamp for heating water rapidly.

The midwife is to scrub her hands with hot water and soap for at least five minutes, trim her nails suitably, cleanse the roots of the nails and the spaces under their free borders, and rinse the hands with pure water. Then she is to begin with the alcohol disinfection, first with the brush, which has until then lain in alcohol, and then with a piece of flannel. The finger with which an examination is to be made should be particularly rubbed, such twisting and kneading movements being made as will tend to force the alcohol well under the nail. Then an internal examination may be made without anointing the hand. It is said that in this way the examining finger may be made entirely free of germs in ninety-eight per cent. of the cases, and the whole hand in eighty-seven per cent. On account of the danger of fire from the spirit lamp, it is recommended that the water be heated not in the lying-in room, but outside, in a fireplace if possible. By reason of the drying action of the alcohol on the hand it is well to anoint it with carbolized soap in case the whole hand is to be introduced into the vagina.

MINOR PARAGRAPHS.

THE MEDICAL PROFESSION OF PARIS AND THE BAZAR FIRE.

Under the heading of La Revanche des morticoles, the *Journal de médecine de Paris*, after complaining of the popular fondness for sneering at physicians, especially as exemplified in the newspapers, says that among the fifteen hundred persons pent up in the Bazar at the time of the fire there were four hundred men, only three of whom lost their lives. Two of the three were physicians, and one of them, M. Feulard, is known to have gone back into the place voluntarily in order to save others. Moreover, of the hundred and twenty female corpses, ten were those of wives, daughters, or sisters of medical men. Altogether, then, the medical profession furnished more than a tenth of the victims. Is not this number enormous, our contemporary asks, and out of all proportion to the numerical strength of the profession? "*N'est-ce pas là une revanche des morticoles?*" it adds.

ITEMS.

The Colorado State Medical Society.—The twenty-seventh annual meeting was held in Denver on June 15th, 16th, and 17th, under the presidency of Dr. Robert Levy, of Denver. Besides the president's address, the programme included the following papers: The Ancient and Modern Instruments Used in the Diagnosis and Treatment of Diseases of the Stomach, by Dr. C. D. Spivak, of Denver; A Case of Nasal Sarcoma, by Dr. W. W. Bulette, of Pueblo; The Treatment of Pott's Disease of the Spine, by Dr. G. B. Packard, of Denver; The Relation of Diseases of the Ear to those of the Throat and Nose, by Dr. John M. Foster, of Denver; Electricity in the Diseases of Women, by Dr. Minnie C. T. Love, of Denver; The Progress toward Accurate Therapeutics, by Dr. J. T. Melvin, of Saguache; Post-abortive Sepsis, with a Report of Cases, by Dr. P. E. Hyrup-Pedersen, of Denver; A Report of Surgical Cases, by Dr. Leonard Freeman, of Denver; An Operation for Appendicitis, and its After-treatment, by Dr. W. A. Kickland, of Loveland; Prophylactic Gynæcology, by Dr R. R. Walker, of Paris, Texas; The Radical Cure of Hernia, with a Report of a Case, by Dr. Frank Finney, of La Junta; The Clinical Uses of Stethoscopic Pressure, by Dr. Henry Sewall, of Denver; Nasal Polypi, by Dr. P. F. Gildea, of Colorado Springs; Chronic Lead Poisoning, by Dr. E. C. Hill, of Denver; A Case of Unilateral Optic Neuritis with Complete Recovery, by Dr. George Cleary, of Denver; The Removal of Coal and Powder Stains from the Cuticular Integument, by Dr. George W. Miel, of Denver; What Inferences may be Drawn from Cases of Pulmonary Tuberculosis Reported to have Originated in Colorado, by Dr. S. G. Bonney, of Denver; Ichthyol in the Treatment of Diseases of the Eye, by Dr. D. H. Coover, of Denver; Medical Customs of the Mexicans and Rocky Mountain Indians, by Dr. M. Beshoar, of Trinidad; Puerperal Mastitis, by Dr. Laura Liebhardt, of Denver; Two Cases of Tumor of the Cerebellum, by Dr. H. T. Pershing, of Denver; Colorado Springs up to Date, by Dr. R. K. Hutchins, of Colorado Springs; The Prophylactic Treatment of Tuberculosis, by Dr. Frank E. Waxham, of Denver; The Ætiology of Inflammations of the Peritonæum, by Dr. Solomon Kahn, of Leadville; The Symptoms of Inflammations of the Peritonæum, by Dr. P. J. McHugh, of Fort Collins; The Differential Diagnosis of Inflammations of the Peritonæum, by Dr. Hubert Work, of Pueblo; Nervous Diseases Simulating Inflammations of the Peritonæum, by Dr. S. D. Hopkins, of Denver; The Medical Treatment of Inflammations of the Peritonæum, by Dr. W. A. Campbell, of Colorado Springs; The Surgical Treatment of Inflammations of the Peritonæum, by Dr. Frank Finney, of La Junta; Post-operative Peritonitis, by Dr. T. A. Stoddard, of Pueblo; The Insanity of Adolescence, by Dr. Frank P. Norbury, of Jacksonville, Illinois; The Difficulties in the Diagnosis of the States of Unconsciousness, by Dr. J. T. Eskridge, of Denver; The Relation of Malpositions of the Macula Lutea to Heterophoria, by Dr. G. Melville Black, of Denver; The Diagnosis, Prognosis, and Treatment of Mastoiditis, by Dr. W. C. Bane, of Denver; Some Practical Points Gathered from Sources Wise and Otherwise, by Dr. William B. Davis, of Pueblo; The Character of Pulmonary Cases sent to Colorado, by Dr. W. H. Campbell, of Colorado Springs; Migraine in Childhood, by Dr. H. F. Hazlett, of Pueblo; Chloroform in Labor, by Dr. Kate R. Lobingier, of Denver; The Treatment of Uterine Fibroids, by Dr. I. B. Perkins, of Denver; The Inequality of Pupils Observed at an Altitude of 10,250 Feet, by Dr. E. T. Boyd, of Leadville; How Does our School System Influence the Health and Development of the Child? by Dr. E. Stuver, of Rawlins, Wyoming; Thirty-five Cases of Appendicitis, with Remarks, by Dr. F. M. Cchems, of Salida; Puerperal Eclampsia, by Dr. P. D. Rothwell, of Denver; The Present Status of Serum Therapy, by Dr. Alfred Mann, of Denver; The Physical Signs of Acute Bronchitis, by Dr. J. N. Hall, of Denver; Galvanism in Ulcerative Keratitis, by Dr. R. F. Le Mond, of Denver; A Report by the Secretary of the Colorado Medical Library Association, by Dr. Henry Sewall, of Denver; Operative Treatment in Dislocations and Fractures, by Dr. C. B. Nichols, of Denver; The Importance of Diet in Infancy, by Dr. H. B. Whitney, of Denver; Shock from a Medical Standpoint, by Dr. E. P. Hershey, of Denver; The Use and Abuse of the Uterine Curette, by Dr. H G. Wetherill, of Denver; An Abdominal Section on an Infant Sixty-four Hours Old, by Dr. E. J. A. Rogers, of Denver; The Surgical Treatment of Diseases of the Gall Bladder, by Dr. Niel Macphatier, of Denver; Observations deduced from Three Years' Work in Fractures, by Dr. F. H. McNaught, of Denver; Dental Reflexes affecting the Eye and Ear, by Dr. J. R. Robinson, of Colorado Springs; The Effects on Bone of the New Bullet used by our Army, by Dr. J. D. Griffith, of Kansas City; The Methods and Results in Four Hundred and Fifty Cases of Fracture of the Bones of the Forearm, by Dr. C. A. Powers, of Denver; and Some Controverted Points in Medico-legal Matters, by J. H. Pershing, Esq., of Denver.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 15, 1897:

DISEASES.	Week ending June 8.		Week ending June 15.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	13	4	6	0
Scarlet fever	221	20	158	6
Cerebro-spinal meningitis	1	0	1	1
Measles	234	8	192	11
Diphtheria	285	39	255	40
Croup	14	9	10	5
Tuberculosis	192	103	150	94

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, and plague have been received in the office of the supervising surgeon-general:

Small-pox—United States.

Memphis, Tenn	May 1–31	7 cases.	
Cambridge, Mass	May 29–June 5	1 case,	1 death.
New York, N. Y	May 28–June 1		4 deaths.
Boston, Mass	May 29–June 5	1 case.	
Pensacola, Fla.	May 29–June 5	2 cases of varioloid.	
Ft. Meade, Fla.	June 8	1 case.	

Small pox—Foreign.

Aden, Arabia.	May 1–8.	17 cases,	6 deaths.
Trieste, Austria	May 15–22.	1 case.	
Nagasaki, Japan	April 19–26.	20 cases,	2 “
Warsaw, Russia	May 1–8.		5 “
Madras, India	May 1–7.	2 “	2 “
Rio de Janeiro, Brazil	May 1–8.	2 “	
Sagua la Grande, Cuba.	May 22–29.	17 “	3 “
Cardenas, Cuba	May 22–29.	4 “	
Yokohama, Japan	April 22–29.	19 “	2 “
Gibraltar	May 16–30.	3 “	
Liverpool, England	May 15–22.	1 case.	
Glasgow, Scotland.	May 15–22.	1 “	
Osaka and Hiogo, Japan	May 1–15.	4 cases,	4 “
Brussels, Belgium	May 15–22.		1 death.
Alexandria, Egypt	April 30–May 6.		2 deaths.
Cairo, Egypt	April 30–May 6.		2 “
Odessa, Russia	May 15–22.	6 “	1 death.
Nagasaki, Japan	May 9–16.	16 “	2 deaths

Yellow Fever—Foreign.

Rio de Janeiro, Brazil	May 1–8	9 cases,	2 deaths.
Sagua la Grande, Cuba.	May 22–29.	24 “	
Cardenas, Cuba	May 22–29.	10 “	3 “

Plague—Foreign.

Taichu, Japan	May 14–20.	10 cases.	
Tainau, Japan	May 14–20.	101 “	
Taihoku, Japan	May 14–20.	1 case.	

The New York Celtic Medical Society.—At the next regular meeting, on Thursday, June 24th, the order for the evening will be as follows: A paper entitled Prolonged Gestation: its Medico-legal Aspect, by Dr. McDonald; scientific communications; an exhibition of instruments and specimens; the presentation of cases; and a discussion on Neurasthenia and Preventive Medicine.

The Buffalo Academy of Medicine.—At the last regular meeting, on Tuesday evening, the 15th inst., Dr. Woods Hutchinson was to read a paper entitled Some Deformities of the Chest in the Light of its Ancestry and Development, and Dr. A. L. Benedict and Dr. C. C. Frederick were to exhibit specimens.

The Buffalo Hospital of the Sisters of Charity.—We learn that Dr. Mary O'Malley, who was graduated in May from the Medical Department of Niagara University, has been appointed one of the resident physicians to the hospital.

The St. Louis Medical Society.—At the last regular meeting, on Saturday evening, the 12th inst., the following papers were to be read: Some Historic Masters of Anatomy, by Dr. James Moores Ball; and Denver and Pulmonary Tuberculosis, by Dr. W. N. Beggs.

The Late Dr. J. Lewis Smith.—At a special meeting of the medical board of the New York Foundling Hospital, held on June 11, 1897, the following action was taken:

J. Lewis Smith, M. D., who died June 9, 1897, was for twenty-five years visiting physician to this institution.

Whereas, The medical board has lost by death its oldest member, Dr. J. Lewis Smith; be it

Resolved, That it record this tribute to his memory. His fame and his faithfulness have ever been devoted to the interests of this institution.

Resolved, That this board attend the funeral in a body; that a copy of these resolutions be spread upon the minutes and forwarded to the current medical periodicals, copies of the same being sent to the family of deceased.

[Signed.] { JOHN J. REID, M. D., *President.*
W. P. NORTHRUP, M. D., *Secretary.*

The Late Dr. Sumner A. Mason.—The following resolutions were adopted by the West End Medical Society at its regular meeting, June 5, 1897:

The members of the West End Medical Society have learned with regret of the death of their colleague and fellow-member, Dr. Sumner A. Mason.

Those who were well acquainted with Dr. Mason knew him to be most conscientious and unremitting in his efforts as a physician. As a citizen, he contended for the best interests of all, and was most honorable in all his relations. Be it

Resolved, That this expression of our esteem and of our loss sustained be entered upon the minutes, forwarded to the family, and published in the medical journals of this city.

[Signed.] { F. J. BOWLES, M. D.,
E. J. WARE, M. D., } *Committee.*

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 6 to June 12, 1897:*

BALL, ROBERT R., Captain and Assistant Surgeon. The leave of absence granted him is extended two months.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the Two Weeks ending June 14, 1897:*

PENROSE, T. N., Medical Director. Retired from June 6th.

CRANDALL, R. P., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, June 14th, and ordered to the U. S. Steamer Iowa, June 16th.

FARWELL, W. G., Medical Inspector. Detached from special duty at the Marine Rendezvous, Philadelphia, and ordered to continue other special duty.

GROVE, WASHINGTON B. Commissioned Assistant Surgeon from June 3d.

LEWIS, D. O., Surgeon. Ordered to the Marine Rendezvous, Philadelphia, after completion of examining board at the Naval Academy.

SIMONS, M. H., Surgeon. Ordered to the U. S. Steamer Iowa, June 16th.

Society Meetings for the Coming Week:

MONDAY, *June 21st:* New York County Medical Association; Hartford, Connecticut, Medical Society; Chicago Medical Society.

TUESDAY, *June 22d:* Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology): Medical Societies of the Counties of Essex (annual—Elizabethtown) and Lewis (annual), N. Y.; Richmond, Virginia, Academy of Medicine and Surgery.

WEDNESDAY, *June 23d:* Medical Society of New Jersey (first day—Atlantic City); New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *June 24th:* Medical Society of New Jersey (second day); New York Orthopædic Society; Pathological Society of Philadelphia.

FRIDAY, *June 25th:* Medical Society of New Jersey (third day); New York Society of German Physicians; Philadelphia Clinical Society; Northern Medical Association of Philadelphia; Philadelphia Laryngological Society.

SATURDAY, *June 26th:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths.

Married.

BRECKENRIDGE — WILDER. — In Ithaca, N. Y., on Wednesday, June 9th, Mr. Roeliff Breckenridge and Miss Mary Nichols Wilder, daughter of Dr. Burt G. Wilder.

CARAWAY—MCCLENDON.—In Purviss, Mississippi, on Thursday, June 10th, Dr. E. H. Caraway and Miss Mary McClendon.

CULBERT—MAHONEY.—In Buffalo, on Wednesday, June 2d, Dr. James E. Culbert and Miss Margaret Helen Mahoney.

CULVER—COMSTOCK.—In New London, Connecticut, on Wednesday, June 9th, Dr. George M. Culver, of Jersey City, and Miss Caroline Gardner Comstock.

DEATHERAGE—MASON.—In Auburn, Illinois, on Thursday, June 3d, Dr. William W. Deatherage, of St. Louis, and Miss Olive Mason.

HASKELL—OERTEL.—In Wheaton, Illinois, on Monday, June 7th, Dr. M. W. Haskell, of Richland Center, Wisconsin, and Miss Mary Oertel.

HOUGHTON—BECKWITH.—In South Orange, N. J., on Wednesday, June 9th, Dr. Silas A. Houghton, of Brookline, Massachusetts, and Miss Margaret A. Beckwith.

LESTER—CAMPBELL.—In New York, on Wednesday, June 9th, Dr. Frederick William Lester, of Seneca Falls, N. Y., and Miss Elizabeth Belle Campbell.

REISS—CAMPBELL.—In New Orleans, on Wednesday, June 9th, Dr. Paul L. Reiss and Miss Laura Campbell.

THURBER—FISKE.—In Trenton, N. J., on Wednesday, June 9th, Dr. Samuel Wood Thurber, of New York, and Miss Bertha Fiske.

WHALEY—INGLESBY.—In Charleston, South Carolina, on Tuesday, June 1st, Dr. E. M. Whaley and Miss Cecilia S. Inglesby.

Died.

LOEWENSTEIN.—In Brooklyn, on Thursday, June 10th, Dr. Henry Loewenstein, in the sixtieth year of his age.

LUSK.—In New York, on Saturday, June 12th, Dr. William Thompson Lusk, in the fifty-ninth year of his age.

MCNULTY.—In Boston, on Monday, June 14th, Dr. Frederick J. McNulty, in the sixty second year of his age.

RICHARDSON.—In Brooklyn, on Tuesday, June 8th, Britton Richardson, son of Dr. Britton Richardson.

SMITH.—In New York, on Wednesday, June 9th, Dr. J. Lewis Smith, in the seventieth year of his age.

VAN HORN.—In Hot Springs, Arkansas, on Wednesday, June 9th, Dr. William L. Van Horn, of Columbia, Louisiana.

Obituaries.

WILLIAM THOMPSON LUSK, M. D., LL. D.

ON Saturday, June 12th, while still to all appearances possessed of perfect health, Dr. Lusk died suddenly of apoplexy. He was born in Norwich, Connecticut, on May 23, 1838. In 1855 he entered the freshman class at Yale University, but left college on the completion of his first year. For three years, from 1858 to 1861, he studied medicine in Heidelberg and in Berlin. He then returned to the United States and took his degree in medicine from the Bellevue Hospital Medical College, in 1864. Previous to that, however, he had served for three years in the Federal Army during the War of the Rebellion. He enlisted in a New York regiment as a private soon after the outbreak of hostilities. He was shortly made a lieutenant, then a captain, and finally an assistant adjutant-general. As a soldier, Captain Lusk is said to have been unusually cool and valiant. After his graduation in medicine he again went to Europe for further study, which he prosecuted in Edinburgh, Paris, Vienna, and Prague. On his return home he was appointed professor of physiology in the Long Island College Hospital, of which chair he was the incumbent from 1868 to 1871. For the year 1870–'71 he was also lecturer on physiology in the Harvard Medical School. In 1871 he was made professor of obstetrics, diseases of women, diseases of infants, and clinical midwifery in his alma mater, the Bellevue Hospital Medical College. He continued to hold that chair up to the time of his death, and it was in connection with the discharge of its duties that he won the rich professional honors and world-wide fame that fell to his lot.

It is primarily as an obstetrician that Dr. Lusk has been known, especially from his excellent text-book *The Science and Art of Midwifery*, a work that has passed through a number of editions and been translated into several European languages. In his later years he had given more attention to operative gynæcology than to obstetrics, and in that field he was conspicuously successful.

Dr. Lusk was of rather slight build, but very active. He had a pleasing and very mobile face and a melodious voice. He was diffident among strangers, but genial and warm-hearted to the utmost. He was liked, as well as esteemed, by his professional brethren and by the community. This journal has special reason to lament his death, since for two years and a half, from July, 1871, to December, 1873, he was its editor, with his successor, the late Dr. James B. Hunter, as his associate, and he had ever since been ready at all times with wholesome advice as to the conduct of its affairs.

JOB LEWIS SMITH, M. D.

Dr. J. Lewis Smith, the distinguished writer on children's diseases, died at his home, in New York, on Wednesday, June 9th, in the seventieth year of his age. He was born in Stafford, Onondaga County, N. Y., on October 15, 1827. He was graduated from Yale College (now Yale University) in 1849. He attended lectures in the Buffalo Medical School in 1851 and 1852, and took his medical degree from the College of Physicians and Surgeons, New York, in 1853. Since that time he had been a practitioner in New York, devoting special attention to pædiatrics. He was clinical professor of diseases of children in Bellevue Hospital Medical College and the author of a *Treatise on Diseases of Children* that in its various editions has been regarded as an authority for many years. Dr. Smith was a man of kindly disposition and highly esteemed by his fellow-physicians and by everybody who knew him.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of March 10, 1897.

Dr. Adolph Rupp in the Chair.

(*Concluded from page 739.*)

Pemphigus.—Dr. A. C. Bridges read a paper on this subject. (To be published.)

Ulcerating Nævus of the Lip in a Child, producing Harelip. Spontaneous Cure.—Dr. W. S. Brandt read the history of such a case. (See page 828.)

Chronic Urticaria.—Dr. George Thomas Jackson read a paper on this subject. (To be published.)

The Chairman asked Dr. Jackson what was to be understood by chronic urticaria. Was it a peculiar chronic condition of the body that predisposed to frequent attacks of urticaria lasting weeks and months, or were we to understand by the term a frequent recurrence of the malady extending over a long period of time?

Dr. Jackson said that by chronic urticaria he meant that the wheals came out constantly, day in and day out.

Dr. Carr said that it was a satisfaction to hear a dermatologist express himself in favor of dietetic and hygienic methods for a condition of this sort. In connection with other physicians he had seen chronic urticaria cases which had traveled the city round, the patients having seen one specialist after another, and having used every external and internal medication. The latest case that had come to his notice had been that of a young woman of twenty-five years, who had been under the constant care of a physician for over two years, without any relief whatever. The first question the speaker had asked was what she ate for her breakfast. She said that she always had oatmeal and coffee. He had made out a careful dietary and had cut off at once the oatmeal and coffee. At the end of two weeks she had been perfectly cured, and, except for a slight recurrence, she had had no attack since then. He did not call himself a dermatologist, but it seemed to him, from her history and the looks of her tongue, that she had started in the morning with a state of fermentative dyspepsia. On making inquiry about her daily habits, he thought that those were a constant source of trouble, and no ordinary lotion would be of any value without directions for the diet. He thought one's duty was but half done, not only in urticaria, but in a number of other skin eruptions, if one neglected to make some inquiries about the usual habits of the patient, and correct those that were known to be wrong.

Dr. Walker said that he would like to ask Dr. Jackson in regard to a patient he had seen some time ago, as to whether it had been a case of chronic urticaria. The case had been that of a woman in rather poor condition of health, suffering from bronchitis at the time, and almost every day, at certain times during the day, little swellings would come in the face. They lasted for a few minutes and disappeared. Her general condition had been improved by diet and change of climate, and she had got rid of these symptoms.

Dr. Mallett said that he always considered cases of urticaria as the result of faulty nutrition and digestion. In the cases that had come under his observation he was in the habit of using about the same remedies that Dr. Jackson had suggested. In one case that he had noticed, the woman had suffered from urticaria for a number of years, and her condition had been very poor. He had operated for laceration of the cervix, and she had had no return in five years, which he thought was entirely due to the improvement in her condition.

Dr. **William H. Stewart** asked the reader of the paper whether he had known a sudden change of temperature to produce an attack of urticaria.

Dr. **F. L. Taylor** said he had had this disease himself three summers ago for two months. Every night at twelve o'clock it would come on, last for two hours, and then go away. He had obtained relief from bicarbonate of sodium, acetate of lead, or lead-and-opium sponge baths. He had been very much run down at the time, and had gone to the Sweet Chalybeate Springs in southwestern Virginia. He had spent a great deal of time in the open air, and had got entirely well, with no medication at all, but had regulated the diet, taken plenty of exercise, and used the waters.

Dr. **Henry H. Schroeder** said that in his experience these cases had been mostly due to gastro-intestinal disorders. In one case which he had recently attended the urticaria had accompanied pregnancy. The health of the patient had always been most enviable, and there had not been the slightest indication of gastro-intestinal irritation. The character of the disorder had seemed to be purely neurotic. Sedatives, however, such as bromides, chloral, phenacetine, etc., though they were combined with regulation of the diet and soda baths, had been of no use. The administration of large doses in conjunction with a lotion containing carbolic acid, borax, and chloral, had seemed to benefit her considerably, but she had obtained no permanent relief until the second or third day after parturition. The patient had been advised to sleep in a cold room and use the smallest amount of covering compatible with comfort, but the moment she lay down in bed the urticaria had begun to torment her.

Dr. **A. T. Muzzy** said that near the end of his course in Charity Hospital he had had a case of urticaria. He had been advised to use atropine and morphine. It had not helped the urticaria, but had given him a very useful drug for rhinitis, which he often used.

Dr. **Proben** said that in but one case he had used atropine, but had not found it of any benefit; the only drugs he had found of use were alkalies in large doses. As a rule, the disease was due to digestive disturbances or uric-acid diathesis. He remembered one troublesome case in which digestive disturbances had caused the trouble, and the iodide of potassium had been of more use than anything else. He regulated the diet, excluding alcoholic stimulants, and used hydrotherapeutic measures; especially cold ablutions to the parts which became affected, and gave large quantities of water internally for the uric-acid condition, if such was presumed. He thought that some of the cases might be attributed to some benign spinal-cord lesion, especially the posterior columns, and from this theory he had reasoned that mercurials and the iodides would be of use.

The **Chairman** said that the general opinion seemed to be that chronic urticaria was caused by some irritation developing in the alimentary canal. Chronic recurrences of urticaria occurred from causes external to the body. Osler told of a certain region of Switzerland made almost uninhabitable by an insect which caused a chronic urticaria in the natives of the place. Dr. Rupp spoke of a woman who had suffered a great deal from chronic recurrences of urticaria until she changed the method of cleaning her flannel underclothes. Sometimes, as it occurred in children, it was no easy matter to give relief with either medicine or dietary management. He quoted a case related by Baginsky of a child who had cried from the moment it was born, and in which no cause for the crying could be determined until it grew older, when recurrent attacks of nettle rash and prurigo had developed and accounted for the persistent crying. He had seen cases where chronic recurrences of urticaria were complicated in children at times with furunculosis, the furunculosis probably having an origin—alimentary—similar to the urticaria. Another source of origin for urticaria of a chronic recurrent type was mentioned by Charcot—in cases of locomotor ataxia, urticaria had been seen to develop in the course of nerves affected with the lancinating neuralgia peculiar to that disease. Thus the pathology of this disease must be looked for in the alimentary canal, etc., the surface of the body, and in the central nervous system.

Dr. **Jackson** said that one of his objects in writing the paper had been to bring out the opinion of the members on the subject. Doctors often seemed not to appreciate the importance of diet and hygiene. In consultation work he had constantly seen patients to whom had been given all sorts of drugs, but their diet had not been regulated. In regard to whether the case Dr. Walker reported was urticaria, he thought that it was, and cited the case of a young physician who for the past two years had had a recurring urticaria upon his forehead only, the wheals coming at about the same time every day. About the case of uterine trouble and urticaria, it was not at all unlikely that the uterine trouble was the cause, because we had a great many cases of reflex urticaria. This, in an acute form, was not so uncommon. Cases had been reported where passing a uterine sound had set up an attack of urticaria. In regard to the temperature, that was a very marked factor. There were some people who could not go out of doors on a cold day on account of their face swelling up at once. It had been suggested by one writer that for this form of the disease a good plan was to have the patient get up out of bed and at once bathe the face and hands in very cold water and bring out the urticaria, then go back to bed and wait until it subsided, and then he could get up and the urticaria would not bother him at all. In regard to the disease being cured by going out of town, it was exactly what we should bear in mind. One of his most obstinate cases had been that of a doctor who had been worried and anxious about his business affairs, and the speaker had told him he would not get well until he went out of town. When he went out of town he was well in a month. Urticaria occurring in pregnancy was one of the most difficult things to manage, and he did not believe it could be cured while the woman was pregnant. He thought that most women who were pregnant were not in a normal state. He did not regard urticaria due to insects as chronic urticaria, nor that due to a blow. If on a cold day a horse was struck on the back with a whip, there would be a big welt; that was urticaria, but it was not chronic urticaria. In regard to the suggestion that perhaps furunculosis and urticaria might have the same cause, he said that any scratched eruption was very apt to be complicated with furuncles, as it was liable to be affected by the pus cocci. Hot baths were nearly always bad in urticaria. One patient of his whom he had tried to improve by various means, and who could not go out of town, thought he had found a cure, which was an injection of the normal salt solution into the skin. That night he was free from the eruption, and the next night he had it.

Book Notices.

Recherches sur les centres nerveux. (Alcoolisme, folie des héréditaires dégénérés, paralysie générale, médecine légale.) Par le Dr. V. Magnan, Médecin de l'Asile clinique (Sainte-Anne), membre de l'Académie de médecine. Deuxième série. Avec planches et figures. Paris: G. Masson, 1893. Pp. 572.

In taking a bird's-eye view of the literature on mental diseases, one is forced to admit that the French school of alienism of to-day, the school of Magnan, is the most advanced in practical application. Thus, in reading the excellent production of M. Magnan one is deeply impressed with the profound rationalism of his school. In instructing his reader, he enables the latter to ascertain a patient's mental condition with distinctness and precision. The various portions of the treatise are based on clinical data exclusively. With the frankness of a Frenchman, but with the purity of a man of science, the author depicts, with all clinical picturesqueness, the various perversions of instinct which are met with in degenerated human nature. His method of considering the insane is far superior to that of the German authors of to-day, for their basis of classification is hardly sufficiently clinical and entirely too complicated. By M. Magnan's system, on the other hand, the study of insanity becomes at once interesting and simple.

M. Magnan's volume not only is an invaluable guide for the alienist, but would probably prove quite serviceable to the magistrate in search of the degree of culpability of the criminal not yet officially recognized as insane. Clinically convinced of the immutability of hereditary influences and of the fatality of the combination of an adverse heredity and alcoholism, the author devotes a considerable portion of the work to the experimental study of alcoholism, in order to demonstrate its pernicious influence on the public health, for he holds that it threatens to degrade it in every respect.

In the chapters on the hereditary degenerates, which will ever stand as a famous monument to the author for his clinical analyses, at once profoundly human and precisely scientific, of the various impulses and obsessions which are often labeled crimes, and which many alienists designate by the general term "paranoia," this celebrated alienist considers these obsessions, in his classification, as affections quite distinct from paranoia.

If science has not yet determined what constitutes the pathology of insanity, Dr. Magnan has described its clinical manifestations with a scrupulous regard to detail and exactness.

The volume contains several photographs of degenerates and plates of pathological specimens. The book is concluded by a picturesque and instructive analysis of two cases, one of simulated and the other of unrecognized insanity. The author's simple but exhaustive method of taking a history will serve as a classic model and guide to the method of diagnosis of the form of insanity.

The volume has already been translated in part into German, English, and Russian.

Diseases of the Ear, Nose, and Throat, and their Accessory Cavities. By Seth Scott Bishop, M. D., LL. D., Professor in the Chicago Post-graduate Medical School and Hospital, etc. Illustrated with One Hundred Colored Lithographs and One Hundred and Sixty-eight Additional Illustrations. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1897. Pp. xv–2 to 496. [Price, $4.]

In the review of any book, the one attempting this task should as far as possible place himself at the author's point of view and not pronounce the latter guilty of not performing what he has no idea of attempting. This attitude is especially necessary in examining books of this class. The medical specialties of rhinology, laryngology, and otology have made such strides in recent years that he is a bold man who attempts to give more than the briefest outline of their main principles in a single volume.

The volume now under consideration represents an attempt of this kind which is not, in our opinion, remarkably successful. While there are perhaps few if any statements to which exception can be taken, the topics are treated in a very meagre manner. The views of a clinical teacher so successful as Dr. Bishop is are always welcome, but there is such a thing as trying to condense too much. There results a fragmentary treatment of subjects, so that the student and practitioner alike are dissatisfied and are obliged to go over the entire ground again in a more elaborate treatise.

On certain topics, notably hay fever, Dr. Bishop discusses the various aspects of the question quite fully. Here his method is most satisfactory, for his style is clear, his method is logical, and his conclusions are sound. The chapter on diphtheria antitoxine is fair and probably the best exposition of the subject which has yet appeared in any text-book. While due allowance for brevity required in a book of this kind should be made, the danger is that disputed questions will be disposed of in a summary manner not always allowing of a fair presentation. An illustration of this occurs in the section on atrophic rhinitis, where the much-mooted point of ætiology is disposed of in the bald statement "This is generally a sequel of a chronic rhinitis." It may be, indeed, but that it generally is is a position hardly to be maintained.

The good features of the book have already been promulgated in journal articles by the author. We must in all frankness confess that this volume does not represent the best work of which the author is capable. At least, that is our judgment.

Retinoscopy (or Shadow Test) in the Determination of Refraction at One Metre Distance with the Plane Mirror. By James Thorington, M. D., Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Twenty-four Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1897. Pp. 9 to 66. [Price, $1.]

This little book presents as simple and practical a description of the shadow test as exists in our language. The author has endeavored to show how the test is used and its applications. He has avoided all discussion of the theory on which it depends, and this adds materially to the usefulness of the book to the average reader, for the theory is still a mooted point, and in some learned descriptions of skiascopy, especially those of Parent and Leroy, the account of the wherefore obscures the fact that the test is of great value; as was the case with the small boy, described by Higginson, who cried because he could not tell *why* two and two made four. The reader is not burdened, moreover, with details of apparatus and methods. The simple rules are given which are required for an accurate practice, and if a greater precision is desired it can only be obtained by experience, to which all books serve but as introductions.

An Account of the Life and Works of Dr. Robert Watt, Author of the Bibliotheca Britannica. By JAMES FINLAYSON, M. D., Physician to the Glasgow Western Infirmary and the Royal Hospital for Sick Children, etc. With a Portrait. London: Smith, Elder, & Co., 1897. Pp. 46. [Price, 3*s.* 6*d.*]

DR. FINLAYSON has given us in a most delightful way the story of one more of the many physicians who are famous for their literary achievements rather than for work in the field of medicine, for Dr. Watt will always be better known as the author of the *Bibliotheca Britannica* than as the practitioner of Glasgow.

The style of the author is attractive and the volume will be welcomed by all lovers of biography, while to the general practitioner the account of the controversy in regard to the value of vaccination will be full of interest.

BOOKS, ETC., RECEIVED.

A System of Medicine. By Many Writers. Edited by Thomas Clifford Allbutt, M. A., M. D., LL. D., F. R. C. P., F. R. S., F. L. S., F. S. A., Regius Professor of Physic in the University of Cambridge, etc. Volume III. London and New York: The Macmillan Company, 1897. Pp. xiv–3 to 1176. [Price, $5.]

Lippincott's Medical Dictionary. A Complete Vocabulary of the Terms used in Medicine and the Allied Sciences, with their Pronunciation, Etymology, and Signification, including much Collateral Information of a Descriptive and Encyclopædic Character. Prepared on the Basis of Thomas's Complete Medical Dictionary. By Ryland W. Greene, A. B. With the Editorial Collaboration of John Ashhurst, Jr., M. D., LL. D., Barton Professor of Surgery and Professor of Clinical Surgery in the University of Pennsylvania; George A. Piersol, M. D., Professor of Anatomy in the University of Pennsylvania; and Joseph P. Remington, Ph. M., F. C. S., Professor of Theory and Practice of Pharmacy in the Philadelphia College of Pharmacy. London and Philadelphia: J. B. Lippincott Company, 1897. Pp. xi–1154.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Volume IV. With Illustrations. Philadelphia and New York: Lea Brothers & Co., 1897. Pp. 6 to 1062. [Price, $6.]

Illustrated Skin Diseases. An Atlas and Text-book. With Special Reference to Modern Diagnosis and the Most Approved Methods of Treatment. By William S. Gottheil, M. D., Professor of Skin and Skin Diseases at the New York School of Clinical Medicine, etc. Portfolios IV, V, and VI. New York: E. B. Treat, 1897. Pp. 85 to 156. [Price, each part, $1.]

The Significance of Palatal Deformities in Idiots. By Walter Channing, M. D., of Brookline, Massachusetts. [Reprinted from the *Journal of Mental Science.*]

The Relation of the Medical Profession to School Education. By Walter Channing, M. D. [Reprinted from the *Annals of Gynæcology and Pædiatry.*]

The Therapeutic Value of Hydrobromate of Scopolamine in Plastic Iritis. By Charles A. Oliver, M. D., of Philadelphia. [Reprinted from the *American Journal of the Medical Sciences.*]

Description of a Successful Operation for Blepharoplasty, embracing the Outer Halves of both the Upper and Lower Lids by a Single Split Flap taken from the Forehead for Epithelioma. By Charles A. Oliver, M. D. [Reprinted from the *University Medical Magazine.*]

Primary Sarcoma of the Lacrymal Caruncle, with the Report of an Additional Case. By C. A. Veasey, M. D., of Philadelphia. [Reprinted from the *Archives of Ophthalmology.*]

Experimental Production of Fat Necrosis. Fat Necrosis about the Pancreas of the Hog. By Herbert U. Williams, M. D., of Buffalo. [Reprinted from the *Boston Medical and Surgical Journal.*]

Cancer of the Rectum. By James P. Tuttle, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Ulcers of the Cornea—Implantation of a Glass Ball for the Better Support of an Artificial Eye. By L. Webster Fox, M. D., of Philadelphia. [Reprinted from the *Medical Bulletin.*]

Ophthalmia Neonatorum. By L. Webster Fox, M. D. [Reprinted from the *Medical Council.*]

Congenital Absence of Uterus and Vagina. Plastic Operation for Artificial Vagina, taking Flaps from Nymphæ and Perinæum. By W. L. Burrage, M. D., of Boston. [Reprinted from the *American Journal of the Medical Sciences.*]

Eucaine Hydrochlorate as a Local Anæsthetic in Hypertrophic Rhinitis. By Lewis S. Somers, M. D., of Philadelphia. [Reprinted from the *Therapeutic Gazette.*]

Was Robert Houston, of Glasgow, the First Ovariotomist? By J. Greig Smith, M. B., F. R. S. E., of Bristol. [Reprinted from the *Practitioner.*]

On the Occurrence of Nephritis in Early Syphilis, with the Report of a Case terminating Fatally. By J. A. Fordyce, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

Painless Operations without Ether or Chloroform, or the Method of Infiltration Anæsthesia, etc. By William J. Robinson, M. D. [Reprinted from the *Medical Record.*]

The Importance of a Systematic Microscopical Examination of Uterine Scrapings and of Excised Pieces as an Aid to Diagnosis. Based upon the Analysis of One Hundred Cases. By Hunter Robb, M. D., of Cleveland. [Reprinted from the *American Journal of the Medical Sciences.*]

Miscellany.

The Nervous and Mental Phenomena following Surgical Operations.—In the June number of *Medicine* there is an article on this subject by Dr. Harold N. Moyer, of which the following is the substance: Shock, he says, is largely physical, yet the mental condition of the patient plays a most important rôle. A feeling on the part of the patient of confidence in the operator and the result of the operation is one of the most important factors in lessening shock and preventing the unpleasant nervous sequelæ which follow.

Dr. Moyer thinks that suggestion is valuable; that an effort to hypnotize patients before operations should be made; and that the anæsthetic should be preceded by full hypnosis. In some cases it might not be necessary to employ an anæsthetic at all; much, he thinks, can be done by the use of drugs. A few large doses of bromides before the operation will quiet the nervous system and lessen apprehension. Alcoholics and opiates may be used for the same purpose. All these agents, he says, are too much neglected in the preparation of the patient; in many cases the anæsthetic is given carelessly, and in others the time of anæsthesia is prolonged owing to a lack of preparation.

The practice of local anæsthesia by the Schleich method is, Dr. Moyer thinks, sure to be of great importance in lessening general anæsthesia, and consequently shock.

The author is of the opinion that the nervous phenomena which follow operations often have their foundation in the pre-operative period, and no intelligent discussion of their treatment, he says, can be had which does not include the entire care of a patient before and after an operation.

In regard to the neurasthenic state, sleep is the most important thing. If pain follows an operation, it should be relieved if possible. If the patient is nervous and shaky, a sedative should be given. Dr. Moyer believes that the bromides should be used, and states that they are not depressing and do not interfere with nutrition, provided they are employed for a few days only. They have the property, he says, of putting the nervous system in splints, and for this purpose they are invaluable. With bromides a good general tonic may be administered. Particular attention should be paid to the condition of the bowels, and above all to the amount of fluid taken in; in some cases this is excessive, but in many it is diminished, and in many cases, if the patients are watched, they will be found to take very little fluids. For these water must be prescribed in definite quantities. Of course, he says, the early administration of liquid food goes without mentioning. The plan which ought to be adopted is to lessen so far as possible the shock of operation, and to treat the neurasthenic state which is the outgrowth of this condition. The treatment of the neurasthenia should begin immediately after the operation. In this way the best results will be secured and the patients will not become chronic invalids.

Mental disorders are by no means uncommon—for example, the mild or severe delirium which comes on soon after an operation and may lead to a fatal termination in a few days. This has been and is well described, says Dr. Moyer, by the term delirium traumaticum. Its treatment is not different from that of acute mania, though the surgical aspects may materially complicate the treatment.

The forms of insanity following operations are almost always included under the terms confusional, which is the most frequent; melancholia, less frequent; hypochondriasis, simple mania, and sometimes paranoia. As a rule the chronic degenerative psychoses do not have their initiation in a surgical operation. The treatment of these various conditions is not different when caused in this way from what it is when occurring in non-surgical cases.

Dr. Moyer calls attention to the very great importance of distinguishing the psychoses from the mental changes which follow the acute inflammations of the kidneys and the consequent lessened secretion by these organs. He also calls attention to the great importance of the nervous system in surgical work, and says that a due appreciation of it is an important factor in preventing mortality and in realizing that full benefit of operative work—a restoration of health—is imperative.

Bromoform Poisoning in a Case of Whooping-cough in an Infant.—In the June number of the *Annals of Gynæcology and Pædiatry* Dr. Louis Fischer gives an account of a case which came under his observation at the German Poliklinik in November, 1896. The child had coughed for some time, and always cried after each attack, as the cough appeared to be very painful. The attacks were very violent and usually ended in vomiting. The child's face became very red or bluish-red. The attacks were more frequent and more violent during the night; the mother stated that the child coughed less in the open air. With the exception of a slight attack of summer complaint, there had been no previous illness. The child was nursed at the breast, and nothing abnormal was visible. A general inspection revealed the following: The head was square, and the fontanelle was closed; there was no evidence of craniotabes. The eyes bulged slightly; exophthalmia was present, also a slight œdema of the eyelids. The face looked puffy, and the skin was of a grayish color. The tongue was slightly furred. There was a very decided congestion of the pharynx, the tonsils were enlarged, and the uvula was elongated. The submaxillary glands also were enlarged. Epistaxis occurred after violent coughing. The nose presented nothing abnormal. Dentition had been quite regular, and a few carious teeth existed. An examination of the thorax and abdomen showed the lungs to be quite normal. Some moist crepitant râles were heard at the apices of both lungs, also loud sonorous râles. The pulse was accelerated, fairly good, and regular. The temperature was 99° F. in the rectum, and respiration did not appear to be abnormal.

A teaspoonful of the following solution was ordered to be given every hour:

℞ Bromoform	40 drops;
Syrup of orange peel.......	7 fl. drachms;
Alcohol	2½ " "
Water, enough to make.....	14 " "
M.	

The medicine was given regularly for a few days, when the child was brought to Dr. Fischer in a condition of stupor. It could not be roused; the pulse was soft and intermittent, about 120 a minute. The hands and arms were warm, while the feet and legs were cold. The face and ears were covered with an erythematous eruption. The corneal reflexes were partially absent, and the pupils did not react. The temperature was 99° F. in the rectum. The child was in a condition of the deepest narcosis; respiration was slow, and a slight snoring was audible. Continued hypodermic stimulation was given, and artificial respiration performed. Mustard footbaths and faradization were applied, and coffee and brandy were given by the mouth. On the following day the child recovered.

Regarding the quantity of bromoform given, says Dr. Fischer, as the specific gravity of bromoform is greater than that of the other ingredients in the mixture, it naturally sinks to the bottom of the bottle, and the mixture, in order that it should be properly given, should have been thoroughly shaken before administering it. This not having been done, the bromoform precipitated, and must have been given in one dose in the last teaspoonful contained in the bottle, and the child must have received nearly all of the forty drops at one time.

The Diet in Tuberculosis.—Raw meat reduced to a pulp, says M. Grancher, in the *Journal de médecine de*

Paris for May 9th, is one of the best foods that can be recommended for a tuberculous patient. It may be taken in any way the patient pleases; in hot or cold bouillon, mixed with a little brandy or the yolk of an egg, or with a *purée* of potatoes, etc. The method of preparing this pulp is of great importance, and M. Grancher gives a detailed account of how it should be done.

This pulp, with eggs, forms the basis of the "diet of recovery." When it is given in amounts of from three to six ounces and more it does not overload the stomach. It may be taken with the two principal meals or as a light luncheon. It is quickly digested and easily assimilated. It is very superior to the meat powders, of which patients quickly tire, to the peptones, which are frequently impure, to the American consommés, and to the Leube-Rosenthal solution, all of which preparations are much less natural and less easily assimilated. From time to time the employment of this meat pulp should be interrupted, especially in the beginning, if diarrhœa sets in or if the patient becomes disgusted with it; afterward it may be given again in very small quantities, and slowly and progressively increased.

M. Grancher thinks that meat juice may be used as a substitute for the pulp for a few days every month, in order to avoid weakening the stomach or disgusting the patients; but he does not advise its steady employment, as it is very inferior to meat pulp or eggs. The latter, he says, are as valuable as the meat pulp, as they contain much nitrogen and a fatty substance which is very finely divided and assimilable. The yolk, with or without cream, is a valuable adjuvant to this diet. Milk in small quantities is also a good article of diet, but very inferior to the first two; it is used more especially as a vehicle for other foods; it may be used, however, as a drink at meals. It is an excellent quieting diet when the stomach is weak and it is necessary to put it on a comparative diet for a few days. Milk powders and peptonized, diastatized, or humanized milk are not to be recommended; kumyss may be useful sometimes when the appetite is poor and the intestine is irritable and easily made to contract. Kephir is useful when the stomach secretes an excessive amount of hydrochloric acid, especially as a medicine. Milk should always be boiled or sterilized.

M. Grancher recommends cereals, especially rice, which, he says, is perfectly digested if it is cooked properly. Dry vegetables, such as beans, peas, etc., are good articles of diet; green vegetables may be considered only fairly good, as they are composed chiefly of water and cellulose. Desserts, with the exception of cheese, particularly Gruyère, and cooked fruits without butter and without sugar, are to be avoided; as a substitute, custard, not very sweet, may be eaten.

Regarding drinks, red wine is rarely permitted; spring water, pure or mixed with a little white wine or beer, is the best of drinks. Milk, however, may be very useful in moderate quantities. Beer is agreeable and useful; so are hot drinks, such as weak tea and coffee.

Commelina (Yerba del Pollo).—In the June number of the *American Journal of Pharmacy* will be found an interesting article by Mr. Alfonso Herrera, of Mexico, who states that several plants of the family *Commelinaceæ* are known in Mexico by this name. He refers to many experiments undertaken in regard to the efficacy of this plant as a hæmostatic. The Aztecs, he says, used it to cure fevers, headaches, tumors, and hæmorrhages, and to give relief in childbirth. Almost three centuries later Alzate made known to his countrymen the remarkable activity of this plant in stopping the flow of blood from wounds, but his efforts were useless, and the plant remained unnoticed until the year 1863, when the experiments of Hernandez and Alzate were repeated, physicians were induced to use it, and its active principle was sought for.

Regarding the analysis of this plant, Mr. Herrera found that ammonia was obtained, even at an ordinary temperature, by wetting the powdered plant and mixing it with lime or the carbonate of potassium. The dried plant also yielded chlorophyll when treated with ether. The following principles, he says, are contained in the Yerba del Pollo: In the juice, acetic acid; in the extract, ammonium acetate, potassium chloride, albuminoids, vegetable albumin, chlorophyll, extractive, and cellulose.

Regarding its therapeutic uses, Mr. Herrera states that the most distinguished physicians of Mexico use the extract of commelina as a kind of hæmostatic in the treatment of metrorrhagia and hæmoptysis, administering it in pills in the latter case, and in injections in the former. They employ it, too, as an active remedy in leucorrhœa and as a general hæmostatic in capillary hæmorrhage. The extract is to be given in pills containing one or two grains, and from twenty-four to forty-eight *pills* may be taken in a day. The injections are made by adding from a drachm to an ounce of the extract to a pint of water. For wounds, cataplasms may be made from the powder of the plant, or a concentrated solution of the extract may be applied by means of lint.

Mr. Herrera quotes the following from the proceedings of the *Academia de Medicina de México*, session of February 21, 1866: "Dr. Lucia has repeatedly used commelina to cure metrorrhagia, and always with success. Dr. Villagran has also used the extract in injections, the dose being a drachm to a pound of water, to cure metrorrhagia, and has always obtained the most satisfactory results. He has lately used it in an instance of cancer in the stomach, and has attained most unexpected success. Dr. L. Jimenez has also been fortunate in the use of injections of extract in two cases of uterine cancer, and in leucorrhœa accompanied with chlorosis. Dr. Miguel Jimenez has used the extract since the year 1864, and has made many experiments with the plant which prove its activity as a hæmostatic. The greatest results are obtained, according to this physician, by the dose of a drachm in a pound of water. Its utility is incontestable in uterine cancer, but it is also useful in other forms of hæmorrhage. Dr. M. Jimenez remembers an instance of hæmoptysis in which he was surprised by the good results obtained with this medicine, for it prolonged the life of the patient in an unexpected manner. He has also used it to cure hæmorrhoidal flux with success. He has failed, however, in some other cases of hæmoptysis, on account, perhaps, of the patient vomiting, which prevented the action of the remedy."

Holocaine.—In this new agent, says Dr. Hasket Derby, in the *Boston Medical and Surgical Journal* for June 3d, we have a remedy that is likely to supplant cocaine in many cases of ophthalmic surgery, and its advantages are as follows: 1. It does not enlarge the pupil. 2. It does not affect the accommodation. 3. It does not increase the intraocular pressure. 4. It promotes antisepsis. 5. It may be used when cocaine is contraindicated.

The author states that holocaine possesses strongly poisonous properties, and that this fact prevents it from being used subcutaneously. It does not contract the blood-vessels, and operations done under its influence are likely to be attended by more hæmorrhage than those performed under that of cocaine.

Dr. Derby states that up to the present time holocaine has been used under his observation in six operative cases and in ten others. The operations embraced three extractions of senile cataract, one of a dislocated lens, and one discission. Anæsthesia was rapid and satisfactory in all these cases, the main contrast with cocaine being the slight flushing of the eyeball. In one case of trachoma, in which Dr. Standish did expression, anæsthesia did not come on for over seven minutes, but was then complete. In the ten remaining cases holocaine acted as cocaine would have done, save that there was no effect on the pupil.

Dr. Derby alludes to the experiments made by Heinz and Schlösser, who, he says, have been working with this drug for the past four months. In their experiments from one to two drops of a one-per-cent. solution generally brought about entire anæsthesia in from forty to fifty seconds. When a second application was made, forty seconds after the first, entire loss of sensation invariably followed in thirty seconds more. The duration of the anæsthesia is at least ten minutes. After the opening of the anterior chamber a second application was found to affect both iris and ciliary body, an iridectomy in a case of acute iritis causing no pain. This effect on the iris, Dr. Derby says, he, too, has observed. He had used holocaine in a simple extraction of senile cataract, but finding it impossible to clear the pupil he had been obliged to remove a small piece of the iris after the operation had been otherwise completed. No holocaine had been instilled since before the operation; and yet the patient, a nervous and apprehensive woman of seventy-two, had suffered absolutely no pain.

In view of all this, he thinks that, with our present knowledge, holocaine is likely to take the place of cocaine in ophthalmic surgery, except in cases where subcutaneous injection is required.

The Management of Infectious Diseases in Philadelphia.—At a meeting of the Philadelphia County Medical Society held on May 12th, the president, Dr. James Tyson, in the chair, Dr. Edwin Rosenthal presented an account of the Municipal Hospital for Contagious Diseases, and there was a discussion on the subject. The following is condensed from proof sheets of the *Medical and Surgical Reporter* furnished by the society: The buildings consist of a main structure containing a central administration building and two wings, having a total length of two hundred and eighty feet and a width of fifty feet. Each wing contains two wards on either floor, forty-two by twenty-six feet and a half, and fourteen feet in height, making eight wards in all, each ward accommodating twenty beds. In the attic are six rooms on one side, and the same space on the other, though not divided into small compartments.

The main building is fifty feet square, with a basement, two stories, and an attic, and is covered with a slate roof, French style. The centre building has four rooms on each floor, eighteen by twenty feet, with a hall ten feet wide, containing a flight of stairs from the cellar to the attic, and a cross entry connecting with the piazzas that run the entire length of the hospital wings. The wards in each wing of each story are separated by rooms twelve feet in width, provided with baths, water-closets, etc., and from them there is access to the piazzas, which were intended to shelter convalescent patients, and furnish them the means of exercise in the open air.

The hospital, although a great improvement over any previously possessed by the city of Philadelphia, was incomplete in many respects and not well adapted for the treatment of a variety of contagious diseases. The plumbing was defective in plan and in execution. The drainage was conducted to wells upon the premises. In 1873 the drainage was very much improved by abandoning the wells and connecting the system with sewers near by. Water and gas were introduced from the city mains in the year 1890. In 1875 a chamber for disinfecting by dry heat and one for disinfecting by chemical vapors were constructed at the north end of the laundry building. This was in use until the fall of 1893, when a steam disinfecting plant was constructed. In 1892 a cremating furnace was erected upon the grounds for the purpose of destroying infected clothing, bedding, etc., in a prompt and inoffensive manner. This furnace was constructed upon the plan of a reverberatory furnace, the smoke being consumed.

Another improvement, which is perhaps of greater importance, was the erection of a pavilion hospital in 1893. This building is located on the plot adjoining that upon which the main building stands, the plot having an area of about four acres. This building is complete in itself. It was erected with the idea that cholera would probably reach the city, and upon its completion was turned over immediately for the use of diphtheria patients. Since the fall of 1893 it has been in constant use for the treatment of this disease. Frequently it has been filled to its utmost capacity, and as diphtheria is a disease that is constantly more or less prevalent in Philadelphia, and as the application of the bacteriological proof will necessarily detain patients for a longer period than formerly, this building, which has an extreme capacity of sixty beds, has been found inadequate to meet the demands made upon it for this class of patients alone, and a new pavilion hospital was erected and completed in 1896.

In 1895 two bath-rooms were constructed in the place of the old disinfecting chamber at the north end of the laundry. These are complete in every respect and are used for bathing by a class of patients immediately after leaving the hospital building and before leaving the institution.

There have also been constructed this year three small portable hospital buildings, similar to the one erected in 1893 as a temporary small-pox hospital. These buildings are capable of accommodating twelve patients each, but, one having been reserved for the nurse's use, the capacity is reduced to thirty-six patients. Connected with this group of buildings are two diet kitchens, furnished with gas stoves, two bath-rooms, and two water-closets, and a water-closet and bath-room for the nurses. A small laundry for their special use has also been added. These buildings were to be used for small-pox patients, but are at present used for a special class of patients, such as mixed cases of scarlet fever and diphtheria.

In 1894 a lodge-house was constructed at the northwest entrance. A gate-keeper resides here, who answers questions asked by those who visit the hospital, in connection with relatives or friends therein. The information is transmitted through a telephone, communicating with the different parts of the hospital.

The most essential improvement has been made within the last three years, an addition being made last year to the diphtheria pavilion. This is similar in appearance to the other pavilions, but is vastly superior in construction, being provided with all the improvements that time and experience have shown to be necessary. Like the other pavilion, it is thoroughly ventilated, and heated by hot air, forced through the register. In this new pavilion have been placed three private rooms for pay patients suffering from diphtheria only. Both pavilions are connected by a hallway, which contains the main entrance; the resident physician's room is also situated in the east end of the new pavilion, as is also the dining room. Like the older pavilion, the new one is complete in itself, and is the most attractive building of the group. It is divided into two wards, the floors, walls, and ceiling being painted, and the capacity being sixty patients. Patients are brought to the hospital by two ambulances of modern design, one for cases of diphtheria, and one for cases of scarlet fever.

The institution can accommodate three hundred and fifty-six patients, as follows:

The extreme capacity of the main building is two hundred beds; the extreme capacity of the pavilions, sixty each, is a hundred and twenty beds; the capacity of the portable hospital is thirty-six beds—total, three hundred and fifty-six.

At the present time there is no small-pox in Philadelphia, but should a case occur the authorities would be in an embarrassing position, for all the buildings are now in use, as follows: The main building for scarlet-fever cases only; the pavilion hospitals for diphtheria cases only; the portable hospital for cases of scarlet fever and diphtheria occurring simultaneously in the same persons.

The important fact should be recognized that the Municipal Hospital has permanently become the place of reception for the commonly prevailing contagious diseases, and will continue to be so with an increasing ratio of cases. This is the first merit, for, as physicians, we have the assurance that there is one place to which we can send our contagious cases, without regard to character, whether mild or severe, whether the patient will live or die. The Municipal Hospital will receive all such patients without question, and will take care of them and treat them, in many respects, far better than they would ordinarily be treated at home.

The second merit of the Municipal Hospital is that it stands as a bulwark against contagious diseases. It prevents their spread by receiving the first patients, keeping them until they are well, and removing all danger of infection. In this way its benefit to the public can never be estimated. If due publicity were given to the cases admitted early, and spread of the disease thus prevented, the claims of this hospital on the municipal treasury would receive a prompt consideration.

The third merit of the hospital is the conspicuous fact that the builders builded better than they knew, for, in placing the hospital at its present site, they chose the best locality for the good of the people. Centrally located, almost equidistant from the farthest parts of the city, situated between two lines of railroad, so that residential improvements are totally out of the question, and in a tabooed section of the city, the hospital has been an improvement to the neighborhood, and no just complaints have arisen warranting its removal.

Unfortunately, this hospital has also some demerits, and, while they can not eclipse its good points, they are sufficiently important to call for some attention.

First: The old building should be improved. The piazzas, as suggested by Dr. Welch, should be inclosed with windows; they could then be used as sun parlors in winter, or as additional wards when the other wards become, as is frequently the case, overcrowded.

Second: No provision has been made for a home for the nurses. As is so generally known, disease spreads amid crowding, and a nurse might become the carrier of contagion. For this reason, among others, separate buildings should be constructed for each group of nurses. At present, such precaution is taken with the resident physician, but the means are inadequate to do so with the nurses.

Third: It is not the part of wisdom to group together the virulent and the mild cases of contagious disease. At present cases of measles and whooping-cough are not sent to the Municipal Hospital, but go to the Philadelphia Hospital. It would be good policy to have a suitable hospital built at some distant point for small-pox cases, and to leave the Municipal Hospital for scarlet fever and diphtheria.

Fourth: The grounds are inadequate to meet the requirements of a modern hospital. The city should acquire possession of the surrounding land, which will always remain unsuitable for residential purposes by reason of the close proximity of the railroads. On this ground suitable buildings should be erected for the nurses, the physicians, and the patients.

Especially for the patients there should be erected such buildings that could be used for the reception of suspected cases, and also buildings that could be used for those convalescing. No provision has ever been made for these two groups of cases, and the cost would be but the least important item.

At present there are no private rooms except in the diphtheria ward, and for diphtheria patients only. Provision should be made for those who can pay and are willing to pay. That the hospital lacks this has been one of the main factors that have prompted those interested in the public health to agitate for a pay hospital for contagious diseases.

In the discussion, Dr. J. Madison Taylor called attention to two points that it was important to emphasize: One was, that after pretty careful thought on the part of a number of people, including the board of health, no place had been found better than the present site of the Municipal Hospital, for the reasons given by Dr. Rosenthal, and from many collateral considerations.

Secondly, the outfit and the place were small, the plant was inadequate in many particulars, and the older buildings were inferior in every way. The original building should be disinfected by fire, as it was saturated with ancient infection. The opportunities for access to this locality were good and there were many points about this situation for the hospital that made it desirable to retain it. The important question was, What was the best thing to do now when modern changes were contemplated? The present site was about the best place for the purpose. Another thing was that there was always enough of scarlet fever and diphtheria in the community to warrant a hospital for these diseases alone, and this was a proper place for such cases. Small-pox had much better be in some remote place, such as Tinnicum Island, or, if that was too remote, then in a separate inclosure near the present one. Finally, there should be some adequately equipped place of isolation for the milder diseases that would work considerable havoc if they became severe, such as measles and whooping-cough. That was a matter that would come up for immediate consideration in the future and would need considerable care.

Dr. Benjamin Lee, of the State board of health, said that, taking the entire group of buildings, he doubted if any city in this country had a more complete and well-arranged hospital for the treatment of communicable diseases. This being the case, what necessity existed for the establishment of private pay hospitals for the treatment of such affections? It was not probable that any hospital erected by private subscription would be better in all its appointments or would afford more cheerful accommodations, even for those who had been accustomed to luxurious homes, than were found in the private rooms of this new pavilion. The necessity arose from two well-established facts:

First, even with the new pavilion there was little more room provided than at present was required for the care of the city's wards, while the very limited number of pay rooms would make it necessary to place the greater number of pay patients applying for admission in the general wards. Secondly, there existed in the minds of the community so deep-rooted an objection to making use of the charity hospital of the city as a refuge for the members of one's own family that the public never could be induced to resort to it to such an extent as would meet the objects which were in the minds of those who were favoring the establishment of such private hospitals.

In conclusion he offered the tribute of his admiration for the devoted manner in which the present physician of the Municipal Hospital had for so long a period discharged the responsible duties of the position.

Dr. William M. Welch, the physician of the Municipal Hospital, said that many difficulties are encountered in the hospital, the chief of which was the difficulty of obtaining money sufficient to provide what was required. A number of pavilions had recently been erected, and they were in many respects very complete and satisfactory. The diphtheria pavilion, erected in 1893 and enlarged in 1896, was certainly well adapted for its purpose. It was, indeed, so complete in all its appointments that there was but little to ask for in the way of improvement.

The main hospital building, erected in 1865, had had nothing added to it since, and was very much in need of repair. It should be enlarged, modernized, and perfected. In some respects the wards were excellent: they were large, the ceilings were high, the corners were rounded, and they contained large open fireplaces, but they were not properly heated and ventilated. The bathrooms and water-closets were inadequate and unsanitary. There were no rooms for pay patients and no extra diet kitchens. The only place available for preparing food for distribution was in the bath-rooms, and these were in the same apartments with the water-closets. The rooms for nurses and other employees were not sufficient, and most of these rooms could not be heated, because of the absence of chimney flues. The needs of the hospital had frequently been pointed out, but it had never been possible to convince city councils of their absolute necessity.

A recent census of the hospitals in the city showed that the Municipal Hospital occupied a place second only to the Philadelphia Hospital as to the number of patients under treatment. At the present time there are three hundred and twelve patients in the various buildings, the daily average during the winter having been about three hundred. In order to accommodate this large number it was necessary to place two children in one bed in many cases, one at either end. This sounded worse, however, than it really was, for the beds were large and the children small. This condition of things should, however, not exist, and it would not if sufficient money was appropriated to provide what was needed.

The diseases in the hospital at the present time were scarlet fever and diphtheria. There were a number of mixed cases under treatment—that is to say, cases in which scarlatina and diphtheria coexisted. These patients were isolated and treated in a building known as the temporary hospital. Not infrequently the Loeffler bacilli were found in the fauces in well-marked cases of scarlet fever; and, on the other hand, the scarlatinal rash frequently occurred in well-marked cases of diphtheria. In the latter event the source of the scarlatinal affection was sometimes known, while at other times it could not be ascertained. It not infrequently happened that the diphtheria ambulance was sent for a person reported to have diphtheria, but when the case was examined by the resident physician who accompanied the ambulance it was found to be one of scarlatina. This ambulance then returned to the hospital, and the scarlet-fever ambulance was sent for the patient. In spite, however, of all the care that could be exercised, an atypical case of scarlatina occasionally found its way into the diphtheria wards, and the infection spread. Dr. Welch's experience led him to believe that there was a very close relation between these two diseases. Often both were seen in the hospital at the same time, equally well marked in different members of the same family. These facts showed how important it was that the hospital should be provided with ample facilities for separating not only the various infectious diseases, but also every possible form of coexistence of these diseases.

The hospital grounds should be enlarged. This could readily be done by purchasing the adjoining plot of ground to the south of the hospital. The acquisition of this land was necessary in order to provide a place for the erection of a small-pox pavilion. If small-pox should occur at the present time it would be necessary to put the patients in a tent; and there was even no place where a tent could be located so as not to endanger the scarlatina and diphtheria patients now under treatment. The vast majority of patients suffering from the latter diseases were children, and many of them unprotected by vaccination. Hence, there would be great risk of the variolous infection spreading.

It was injudicious to treat small-pox patients in the same locality as patients suffering from other diseases, even though the various pavilions might be separated a reasonable distance from each other. There would be but little risk so long as the number of small-pox cases was small, but when the cases were numerous, it was necessary to employ a large number of nurses and other attendants, some one of whom at an unguarded moment, as might be safely assumed, would grow careless, even under the best management, and thus become the agent of spreading the infection. Dr. Welch was becoming more and more convinced every year that some other suburban section should be selected for a small-pox pavilion, and that the present buildings should remain indefinitely where they were for the treatment of diphtheria and scarlet-fever patients. This change would probably remove all opposition to the present location of the hospital.

The president asked whether an ideal plant would involve a separate room for each case of infectious disease of this kind, or whether all could be treated in a common ward to as great advantage.

Dr. Welch replied that the risk of intercommunication of disease could in that way be prevented; but such a method would be quite impracticable in a large hospital.

Dr. Rosenthal said that the only way to open the eyes of councils to the necessity of extension and alteration of the Municipal Hospital was by experience, such as that of an epidemic of small-pox or some other infectious disease. The failure of councils to act in the matter has caused the Woman's Health Protective Association to undertake to secure the means to build a pay hospital for contagious diseases. The diphtheria pavilion of the Municipal Hospital was in every way a most admirable place, and if there was a sufficient number of such buildings for cases of scarlet fever and diphtheria the projected new hospital would scarcely be necessary. The present situation of the Municipal Hospital could hardly be improved upon.

Eucaine in Dental Surgery.—In an article on this subject, published in the *Nouveaux remèdes* for May 24th, M. Touchard remarks that the new local anæsthetic, eucaine, seems to be capable of replacing cocaine and rendering service in dental surgery. It has been used, he says, successfully in ophthalmology, laryngology, and dermatology, also in anæsthetizing the mucous membranes. M. Reclus has also experimented with it in surgery, and the results of his experiments have been recently communicated to the Académie de médecine. It has been carefully studied from a physiological point of view by Professor Pouchet, and especially by M. Hernette, who experimented with it in Professor Pouchet's laboratory. The results of these clinical observations and experiments, says M. Touchard, show that eucaine is a good local anæsthetic employed in small amounts; but, according to Reclus, Hernette, and others, its use should be confined to small surgical operations and to dental extractions. It has, in fact, in dental surgery, the advantage of enabling the patient to remain either seated or standing.

M. Touchard gives an account of eleven cases in which this anæsthetic was used, and he thinks the results prove that eucaine may be useful in dental surgery.

Its employment, it is said, is preferable to that of cocaine, because of the toxic symptoms which may follow the use of the latter. According to Kiesel, as many as twelve syringefuls of a fifteen-per-cent. solution of eucaine (twenty-seven grains of eucaine) may be injected without injuring the patient's health in any way.

Opinions on this subject are, however, very much divided, and M. Touchard submits the following comparison between eucaine and cocaine, as much, he says, from a point of view of their anæsthetic value, as from that of their toxic properties: The same general symptoms of poisoning are noticed. Given in equal doses, the troubles provoked by eucaine are not so intense as those caused by cocaine. The action of eucaine on the heart is not superior to that of cocaine. It lessens the number of heart beats and diminishes the blood pressure. When a toxic dose is given a diminution of the pressure is observed. The anæsthesia produced by eucaine is equal to that produced by cocaine as regards the intensity and the duration; it is more intense and of longer duration in the guinea-pig. The toxic equivalent of eucaine is almost equal to that of cocaine. The effects on the heart with eucaine are more rapid and more pronounced than with cocaine. According to Reclus, Legueu, and Hernette, anæsthesia is complete in five minutes after injection; this has been remarked also by M. Touchard. The duration is much shorter than with cocaine, the anæsthesia lasting not more than twenty-five minutes, while with cocaine it has lasted an hour and ten minutes. Eucaine is a vaso-dilator, and cocaine is a vaso-constrictor; the former may often be preferred where there is a predisposition to syncope, while the latter is useful in subjects who bleed easily.

Equal doses being employed, eucaine anæsthesia is inferior to that produced by cocaine, and, although the toxicity of eucaine is a little less than that of cocaine, as it must be in order to obtain an anæsthesia equivalent to that produced by a larger dose, the two anæsthetics are obviously equally valuable. Finally, the short duration of eucaine anæsthesia prevents the employment of the drug in long operations.

The conclusions are, says M. Touchard, that eucaine may render great service in dental surgery, and may be employed as a substitute for cocaine; that it is sufficient to use a one-per-cent. solution of eucaine hydrochloride; that with 0.3 of a grain the most difficult extractions may be made; and that eucaine requires careful handling. Large doses, such as Kiesel employed, should be guarded against, for it is not free from danger, as its toxic power is almost equal to that of cocaine.

The Cold-air Treatment of Typhoid Fever.—In an article on this subject in the *Australasian Medical Gazette* for April 24th, Dr. J. Murray-Gibbes strongly recommends this mode of treatment in typhoid fever, and enumerates the advantages as follows: 1. No handling of the patient is necessary. He lies on a tube mattress and is covered by another, and when it is necessary to lower the temperature a cooling mixture will flow through the tubes. This, the author thinks, should be a continuous current, so that the temperature of the body can be prevented from rising above a certain degree. 2. The shock to nervous patients of being placed in a cold bath is avoided. Attached to the cold-water tube will be another tube which can convey hot water, so that warm water can at first flow through the tubular mattress, and then, by means of taps, be gradually lowered to the required degree.

Dr. Gibbes thinks that this method of treatment has great advantages over previous ones, in that it is possible to have any temperature we wish down to 5° F., and its maintenance at any figure between that and the temperature of the external air by the mere turning of a tap. Besides this, by turning another tap, hot water can pass through the same tubes when it is necessary in the treatment of any disease. A patient can be kept for any length of time surrounded by a cold atmosphere, continually abstracting heat, and so preventing a dangerous rise of temperature, and that without disturbing him.

Dr. Gibbes thinks there can be no doubt that the cold-air treatment he proposes will keep down the high temperature of typhoid fever, and so greatly lessen the death-rate.

As the temperature of typhoid-fever patients is generally higher during the night than during the day, the cold-air treatment can be more easily carried out than the cold-bath treatment, especially as the nursing staff is diminished in numbers during that time, and assistance can not easily be obtained.

The simple turning of a tap can not be compared with the trouble entailed on the hospital staff in providing a cold bath. In fact, says the author, one nurse could attend to a dozen patients with less trouble than to one patient under the old treatment.

In other complaints, such as sunstroke, and local congestions and inflammations of the chest, etc., the freezing-air treatment must prove invaluable, as tube pads of various shapes could be made to fit different parts of the body for conveying hot or cold water.

Antipyrine and Arsenic in the Treatment of Chorea.—The *Presse médicale* for May 29th contains an article on this subject in which the writer remarks that antipyrine and arsenic seem to give better results in the treatment of chorea than other medicaments; only it is necessary to know how to administer them.

According to M. Marfan, he says, antipyrine should be given in a potion, and the daily amount should be divided into three doses, each dose being given at meal time. The first day twenty-three grains may be given, and the amount to be increased eight grains every day until forty-five grains have been reached. This amount is maintained until a notable reduction of the choreic agitation is obtained, when it is progressively diminished until the original amount is reached, which is continued for several days.

Under the influence of this treatment the disorder is quite rapidly allayed, and after a week the patients are quieter; the choreic agitation, however, disappears but slowly, at least in the intense forms; it then disappears completely at the end of about a month. Antipyrine administered in this way considerably shortens the duration of the disease. There are other forms, however, which are rebellious to this treatment, and in these cases the disease is amenable to the arsenic treatment.

This drug should be prescribed in the form of arsenous acid in progressively increased doses. Boudin's solution (1 to 1,000) may be used in the following manner: In the beginning sixty grains of the solution are incorporated in a potion of four ounces, which quantity is to be taken during the day. The initial amount is increased by thirty grains of the solution every day, until intolerance is manifested, without, however, exceeding thirty milligrammes of arsenous acid—that is, four hundred and fifty grains of Boudin's solution. As soon as symptoms of intolerance appear, the amount should be diminished, and usually a diminution of sixty grains of the solution is sufficient to cause the disappearance of the symptoms. After they have disappeared, the amount may be increased again, and recovery will usually occur in from ten to twenty days. This treatment must not be suddenly interrupted, but the amount of the solution diminished every day by sixty grains until it is completely suppressed.

This treatment shortens the duration of the chorea to a greater degree even than that with antipyrine, the evolution being occasionally terminated in two weeks. Ordinarily, children tolerate large doses of arsenic very well, the symptoms of intolerance scarcely appearing until three hundred grains of Boudin's solution have been reached. Sometimes, however, toxic symptoms appear, and for this reason the treatment should be carefully watched. It is necessary for the physician to see the patient every day, and also that those who take care of the patient should be absolutely trustworthy.

The treatment with antipyrine or with arsenic, says the writer, has sometimes to be followed by the use of a hypnotic, in order to procure the sleep of which the patients are so much in need, and for this chloral is the best drug. It is administered in doses of from fifteen to thirty grains at night, about nine o'clock. Chloral, however, is not indicated in chorea complicated with cardiac affections, and in such cases potassium bromide, to which a small quantity of opium has been added, may be employed to induce sleep.

Peronine, a New Remedy for Coughs.—Dr. Siegmund Nowak, an assistant physician of the St. Lazarus Hospital in Cracow (*Therapeutische Wochenschrift*, May 23, 1897), describes peronine as the hydrochloric ether of benzylmorphine, in which the hydrogen of the hydroxyl group of morphine, $C_{17}H_{18}NO_2(OH)$, is replaced by the alcohol radicle $C_6H_5CH_2$. It is a white powder of a bitter taste, soluble in water and in alcohol that is not very concentrated, but insoluble in chloroform and in ether. Schröder (*Therapeutische Monatshefte*, 1897, No. 1) ranks it between morphine and codeine in its action.

Having been directed by his chief, Professor Pareúski, to experiment with the drug, Nowak has tried it in pulmonary tuberculosis, bronchitis, etc. The use of all cough medicines was in each instance suspended for three days before the experiment leading up to that of peronine was begun; then for five days 0.30 of a grain of extract of cannabis indica was given three times a day; then the patient received three times a day fifteen drops of a solution of four grains and a half of codeine phosphate in five fluid drachms of cherry-laurel water; and finally peronine was given, either in pills each containing 0.15 of a grain, from three to six pills daily, or in a solution of a grain and a half of peronine in twenty-five drachms of distilled water, a tablespoonful from three to six times a day. In this way the action of peronine was studied in eighteen patients. Ten of them had pulmonary tuberculosis in the stage of infiltration and cavities; four had chronic bronchitis and pulmonary emphysema; three had acute bronchitis; and one had capillary bronchitis.

The results were as follows: In almost all the cases, without reference to their nature, the cough was less frequent and less intense after the use of peronine was begun, and consequently the sleep was improved; on the other hand, the cough was dryer and expectoration somewhat more difficult. No such complicating effects as headache, lassitude, or stupor were observed, but the patients complained of a sort of burning in the air-passages and of more copious sweating than before. In only one instance, a case of fibrous phthisis, was the use of peronine wholly without effect; but in that case every other remedy, morphine included, was ineffectual. The author can not corroborate Schröder's statement that peronine frequently gives rise to constipation. He gives the following formulæ:

℞ Peronine	1½ grain;
Distilled water	1,500 grains.

M. S.: From three to six tablespoonfuls daily.

℞ Peronine	0.15 to 0.30 grain;
White sugar	5 grains.

M. S.: From three to six such powders daily.

℞ Peronine	5 grains;
Alcohol	75 "
Distilled water	750 "
Syrup	1,500 "

M. S.: A teaspoonful three times a day.

℞ Peronine	7½ grains;
Extract of gentian, Powdered gentian, } each	a sufficiency.

M. Divide into fifty pills.

S.: From three to six pills daily.

Peronine is best given in solution or in pills.

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THE PRESENT STATUS OF GYNÆCOLOGY ABROAD.

By JOSEPH WIENER, Jr., A. B., M. D.

Part I.

I propose briefly to give an account of the science of gynæcology as I saw it practised, during the past year, at the various clinics abroad. In so doing, it must be my endeavor to play the part of a good historian, striving to give an impartial account of what I *saw* rather than of what I *heard.*

Moreover, in giving this account, I must not allow myself to be influenced by any personal preferences, if indeed there were cause for any; for from the day of setting foot on European soil in Hamburg until the day of leaving it in London, I was received with the utmost kindness and treated with the greatest courtesy.

I kept a careful diary, recording each evening the experiences of the day. From these data an attempt to give an account of the present state of gynæcology abroad will now be made.

What strikes us first in visiting foreign clinics is the fact that most of them have government support, and, as a rule, are richly endowed. The university clinics especially have a large corps of assistants, far larger than ours, and there are always several men connected with them who devote their whole time, or at least the greater part of it, to pathological examination and research. Then, again, a great advantage accruing to foreign clinics is the fact that their corps of assistants serve for several years—to be an assistant at a clinic four or five years is not at all unusual. In the absence of the director, for a longer or shorter period, the first assistant performs all operations, and is, I need hardly add, perfectly competent to do so. Owing to the fact that the same body of men work with the same *chef* for so long a time, they get accustomed to one another's ways, and things run more smoothly than can be the case where the assistants change frequently. Naturally, the assistants who serve so long a time obtain a salary which, while not being large, is sufficient to supply their wants. And, moreover, at most university clinics, they have the privilege of giving private courses, for which the remuneration is considerable. On the whole, the assistants are a fine body of men, devoted to their profession, and earnest in their scientific researches. At many clinics, especially where the number of assistants is large, nurses do not assist at operations. As a class, the nurses abroad are far inferior to our own. The cause of this is not far to seek. They do not have an opportunity to nurse in private, and hence can not hope to lay by a competence. They simply work for the organization to which they belong, whether the work is at the clinic or in private. They are cared for in every way by their organization, and are allowed a small sum for incidental expenses. The great advantage, and perhaps the only one they possess, is that they are cared for when, on account of ill health or old age, they are no longer able to perform their duties. Naturally enough, these conditions do not offer a very tempting field to a young woman, and, as a rule, it is the woman more advanced in age, and the one who has perhaps tried in vain in various ways to earn a livelihood, who applies for a position as trained nurse. Of course, there are exceptions to this rule, but it applies, I believe, to the majority of trained nurses abroad.

At most of the foreign clinics, especially in Germany, there is but one operator, who has the appointment practically for as long as he wishes it. As a result the other operators, who must have a place where they can perform their work, establish private clinics. For, as the large majority of the people live in small apartments, the home conditions for performing operations are very unfavorable.

A description of some of the principal public and private foreign clinics may not be out of place here.

1. *Neues allgemeines Krankenhaus* (Hamburg, Ependorf).—Armed with a letter of introduction to the director, Professor Dr. Rumpf, I boarded an electric car at the post office. After a ride of about three miles I was dropped at what looked like a country crossing, and told to walk straight ahead. After a walk of five minutes along a muddy, unpaved street, I saw looming up out of the fog a red brick building. In large letters I read "Neues allgemeines Krankenhaus, erbaut 1884–1888." I was received very kindly by the director, who, after a few minutes' conversation, gave directions that I be shown through, what shall I say—the "hospital"? No; that does not express it. Imagine, if you will, sixty-one separate buildings in a large inclosed space, with nicely laid out grounds—a sort of little town by itself. This is the Neues allgemeines Krankenhaus, and well may Hamburg be proud of it.

It took nearly two hours before I had seen the principal buildings, and long before we were through I was amazed. The hospital contains eighteen hundred beds, has twenty-three internes, besides several externes, over two hundred nurses, with a training school that only prepares nurses for the hospital. The male and female pavilions are arranged on opposite sides of the grounds, in such a way that no two are directly opposite one another, but there is always an open space opposite each pavilion, as well as on either side of it. The average pavilion was an ideal ward with stone floor, white enamel walls, wash and bathrooms. The bedsteads were of iron, painted white, and supplied with wire springs. At the end of each pavilion there is a small room where patients that need quiet can be placed. One large building is devoted only to baths, under control of a "Bademeister." This building alone is enough to be proud of. It contains appliances for every variety of bath—hot, cold, steam, carbonic acid, electric, vapor, and continuous baths. In one of the last-named I saw a poor fellow with bone tuberculosis who had lain in the tub for over a year. In this building there were also at work several *masseurs* under guidance of the "Bademeister."

There were also special buildings for the care of delirious patients, one for small-pox, another for diphtheria, a third for scarlet-fever cases.

Near the centre of the grounds is the operating building, containing one operating room for men, another for women, and a third room devoted only to abdominal and pelvic surgery.

The "deadhouse" is another beautiful building—I mean so far as its arrangements go—containing a vast room, about forty feet high, with nine stone tables on which the autopsies are performed. The light is abundant, being admitted through a large skylight as well as through side windows.

In the same building, adjacent to the autopsy room, is a microscopical room for the attending physicians, and a similar room for the internes, of whom there are several who devote all their time, while at the hospital, to pathological work. There is also a chemical as well as a bacteriological laboratory, with all modern appliances for scientific examination and research. This building is under control of a "prosector," a practising physician, who, however, devotes much of his time to hospital work.

Another building is devoted entirely to the culinary department, containing enormous stores and ovens, where the meals for this little colony of nearly three thousand souls are prepared. Adjoining this is the laundry and sewing department, with steam mangles and other modern apparatus. Near by is the disinfecting department; here infected wash is subjected to high heat for a considerable length of time—only then is it allowed to go to the laundry with the other wash. An architect, carpenters, gardeners, locksmiths, and a host of others make up the paraphernalia of the hospital. The director, Professor Rumpf, is at the head of the institution, and has a handsome dwelling on the grounds. Likewise the superintendent, who stands under the director, and who provides all supplies for the hospital. Besides, there are several other dwelling houses devoted to a worthy purpose—employees of long standing who marry, or who are disabled, have their apartments here. The lighting throughout the buildings is electric, but they are also supplied with gas, in case the electric apparatus is not in working order. About ten thousand patients are treated during a year, with a total of five hundred thousand days of treatment. The yearly expenses amount to one million and a half marks ($375,000), an average of about three marks (seventy-five cents) per day for each patient.

2. *Private Gynæcological Clinic of Prochownick* (Hamburg).—It is located in a wide three-story building, well situated on the "Alster." It contains thirty beds, divided into two classes: First, patients who pay both for the operation and for board, and, secondly, poor patients who are able to pay for their board, but not for the operation. For this latter class there is a ward containing ten beds, and three smaller rooms, each containing two or three beds. They are called "Poliklinik" or dispensary patients. Prochownick has certain hours during which he sees his Poliklinik cases at the hospital. He treats them for minor or for major troubles, lets them return for treatment, and if operative treatment is necessary admits them to the hospital. He told me that the majority of his patients belonged to this class—nevertheless, he was at the time engaged in building a larger hospital for himself. He has a room fitted up for pathological and bacteriological work; he hardens scrapings from the uterus and makes sections; makes cultures of secretions of uterus and vagina, and also stains preparations of secretions. He has two assistants who aid him in his work.

3. *Königliche Frauenklinik* (Dresden, Leopold).—It consists of a large obstetrical and a large gynæcological department. There are five assistants, of whom one only is on the gynæcological service, and he, together with a nurse, are the only assistants at most operations. One assistant has charge of the laboratory, devoting all his time to pathological and bacteriological work. The three other assistants attend to the hospital and outside obstetrical work.

Leopold's position is a singular one: He has complete control of the Klinik, both gynæcological and obstetrical. He is the director of Klinik, there being no other attending surgeon, and has practically *carte blanche* as regards the obtaining of new instruments and apparatus. He gives instruction in gynæcological diagnosis, pathology, and operative technics to men who come from all parts of the world to benefit by this course. In one wing of the Klinik Leopold has his dwelling, and here he also has his office consultations. He has, of course, a right to private practice, and can operate in his private cases at the Klinik. Besides his dwelling he receives five thousand marks annually from the Klinik.

In spite of the large demands on his time, which necessitate his beginning to operate, even in winter, at seven o'clock, often by artificial light, he devotes much time to pathological work. Naturally, it would be impossible for him to accomplish all he does if he did not have everything together in one building. In five minutes he goes from his dining room to the operating room, and in the same time from there to his consultation room.

4. *Carola Haus* (Dresden, Hofrath Credé).—Before describing this hospital it will be necessary to say a few words about "Krankenkassen." Most of the poorer classes belong to such an organization—*i. e.*, they pay each month a certain amount, and when in need of dispensary or hospital treatment they receive it gratis from the dis-

pensary or hospital which is supported by the "Kasse" to which they belong. The Carola Haus is supported by such a "Kasse," and Credé, who is the only attending surgeon, must devote one to two hours daily to the dispensary. To this dispensary the hospital patients come for after-treatment, and here they show themselves from time to time to see whether there is any recurrence of their trouble. From a scientific point of view this arrangement is of great value, as it enables the operator to keep careful track of cases after operation, to note the percentage of recurrences—*e. g.*, after kelotomy—and so on. Credé's position is an honorary one for life; he has the privilege of operating on his private patients at the hospital, and besides receives a fee from all private patients at the hospital who require an operation. The hospital has over two hundred beds, mostly surgical. It is arranged on the pavilion system. One large building contains the executive offices and the operating room. Each pavilion is only one story high, and is divided into two wards of equal size. Covered walks lead to all the pavilions. In winter these walks are inclosed in glass.

The patients are divided into three classes: 1. "Kassen" patients, for whom the "Kasse" pays a certain amount daily. These patients can not be discharged from the hospital so long as they do not feel well enough to go. This is often very annoying to the surgeon, as such patients naturally take away the beds that might be occupied by operative cases.

2. Second-class private patients, who occupy rooms containing two beds, and pay a dollar to a dollar and a half a day.

3. First-class private patients, who occupy rooms alone, and pay two dollars to two dollars and a half a day.

The nurses, as usual, belong to a certain "order," and must give all their time to the hospital, though they are sometimes sent out to do private nursing, for which the "order" receives the remuneration. They receive only a small sum monthly for necessary expenses; when ill, they are cared for, and when no longer able to work, they are likewise cared for by the "order." It is only one of the many manifestations of the subservience of the individual to the system, which one sees so often abroad.

A few years ago Credé introduced a "Heilgymnastik," or gymnasium, into the hospital, which has been more or less copied by other German hospitals. A large room is fitted up with various apparatus for exercising the different joints and muscles of the body. There are swinging weights for exercising the joints of the fingers and hands, rotation apparatus for hand and foot, trapeze, horizontal bars, suspension apparatus for cases of spondylitis, and so on. Cases of chronic rheumatism, fractures, dislocations, paraplegia, and even locomotor ataxia, often improve remarkably under this plan of treatment. One hour daily is devoted to it under medical supervision. A careful record is kept of degrees of flexion and extension, muscular development, and so on. Adjoining the gymnasium is a room for administering douches, massage, and electricity.

5. *The Leipsic Clinics.*—The work in Leipsic is done chiefly by Sänger and Zweifel. The former does all of his in a splendid private clinic, a very wide, three-story building, especially erected by himself. Its arrangements are excellent throughout. The operating room is large and well lighted, and contains only one table, on which vaginal, as well as abdominal, operations are performed. For the latter a Trendelenburg attachment is employed. In vaginal operations he has the leg supports attached to the table about one third of the distance from the foot to the head of the table. By this arrangement the feet of the patient are well out of the way of operator and assistants.

The clinic contains twenty-six beds—sixteen for private, ten for "Poliklinik" cases. Sänger has his own "Poliklinik," or dispensary, in another building; from this he largely draws his material. He generally has only one assistant at the wound, whether in abdominal or vaginal work; the assistant who reaches instruments also assists at the wound when necessary. A very serviceable little arrangement for cœliotomies consists of a wide, flat board, which, covered with a sterilized cloth, is placed across the knees of the patient as she lies in the Trendelenburg position. On this the most necessary instruments lie within grasp of the operator. Gauze sponges stand on a table at the side of the operator. By these means time and assistants are saved.

Zweifel does his work at the Universitäts Frauenklinik, which occupies a palatial new building named after the founder the Trier Institut. This building contains the obstetrical as well as the gynæcological service, both under Zweifel's control. He likewise has his apartments and consultation rooms in this building. It contains, besides, a large amphitheatre, capable of holding two hundred students, in which operations are performed before the class. Besides this, there is a smaller well-lighted operating room. Zweifel uses for his cœliotomies a Martin's table. The woman lies flat on her back; there is no elevation of the pelvis; her thighs and legs hang down from the foot of the table, where the operator sits on a stool. The assistants are also seated, one on each side of the patient. Zweifel is very careful in the selection of his cases, and as a result his statistics are very good.

6. *The Berlin Clinics.*—They may be divided into two classes: First, the Königliche Frauenklinik, and, secondly, the private clinics.

The first named is under control of Ohlshausen and Winter; it has a large material, obstetrical as well as gynæcological.

To the second class belong the clinics of Martin, Landau, Mackenrodt, Dührssen, and several others. Berlin is essentially the city of private clinics, gynæcological as well as surgical. And yet the material is ample in them all. Sometimes a man merely rents two or three "Etagen" in a large house, fits up an operating room, and uses the rest of the rooms for his patients; or an ordinary house is rearranged to meet the demands of modern aseptic surgery. Or, still again, an entirely new building is erected under supervision of the surgeon to meet the special wants of modern operative science. At Martin's clinic and at the university clinic there are separate rooms for performing cœliotomies.

7. *The Austrian Clinics* (Prague and Vienna).—They differ but little from those in Germany. In Prague, owing to the intense hatred between the Bohemians and Germans, the work at the university is divided between the Bohemian clinic, with Pawlik at its head, and the German clinic, under control of von Rosthorn. The patients, as they apply for treatment, both in the maternity and at the gynæcological department, are assigned alternately to the one clinic and the other, so that the number of cases in each remains about the same.

In Vienna the chief work is done in the first and second divisions, at the famous Allgemeines Krankenhaus, under the supervision of Chrobak and Schauta.

In Prague a curious condition exists with regard to private operations. No surgeon is allowed to have a private hospital, but a medical man may have a sanatorium, where he lives and takes charge of the private patients of others. The chief surgeons and gynæcologists accordingly send their patients to such an institution, of which there is a large, well-appointed one with two operating rooms in the neighborhood of the clinics.

8. *The Italian Clinics.*—I was fortunate enough to visit those of Padua, Bologna, Florence, and Milan. In Padua, Inverardi has a clinic with all modern arrangements. It is situated in a building apart from the other clinics, and contains the obstetrical as well as the gynæcological cases. There is a separate operating room for cœliotomies; it is all in glass and stone, and can easily be flooded. It contains a rather queer innovation. On one side of the room are seats for students; but there is an enormous glass window between this side of the room and that in which operations are performed. This enables the students to talk among themselves without disturbing the operator, and also prevents any infection from being carried into the operating room proper. The glass window does not obstruct the view, though naturally the operator is not able to address the spectators during an operation. A Martin's table is employed without elevation of the pelvis.

In Bologna, Calderini, who came from the University of Parma two years ago, is the professor. The clinic is situated in the well arranged Ospedale St. Orsola. The clinics are ranged around a large central court, which makes them all airy and well lighted. Connected with the clinic is a laboratory for chemical and pathological work, as well as an interesting museum.

I can not pass over Bologna without saying a few kind words for the surgical clinic at this university. It is under control of Novaro, and has a large and interesting material. The aseptic and antiseptic principles are conscientiously carried out, and the results are very gratifying. There is, connected with the clinic, a well-equipped laboratory where three assistants devote all their time to pathological examinations and experimental research. It was indeed gratifying to find in one of the oldest European universities such progressive modern work. Before leaving the city I had the pleasure of visiting the old university building, and saw the room where Vesalius dissected and where Galvani lectured.

In Florence, Pestalozza has a large obstetrical as well as gynæcological material. It is located in a separate building containing two operating rooms, the one being devoted only to cœliotomies. Pestalozza recently came to Florence from the university of Genoa. In his work he shows a tendency toward following the teachings of the Berlin school.

In Milan, the work is done in the renowned old Ospedale Maggiore, or large hospital, whose handsome exterior and imposing size, being one of the largest hospitals in Europe, attract the eye more than the interior, which is very old-fashioned and sadly in need of improvement. Many of the requirements of modern antiseptic surgery are lacking in the wards, though the operating room is fairly well fitted up. Until recently Mangiagalli performed all the gynæcological operations here, but he resigned his post to accept the professorship in the comparatively insignificant city of Pavia.

9. *The Swiss Clinics.*—They offer, on the whole, but little difference from the German. In each of them the obstetrical and gynæcological services are under control of one man, who also lectures on these two branches. The clinics at Geneva and Berne are quite small, those at Zürich and Basel more modern and larger. The one at Zürich is the largest, and is excellently arranged throughout; it is beautifully situated on high ground, and affords a splendid view over the Züricher See, with the snow-capped Alps in the distance. But the most modern and most luxuriously arranged (if I may so term it) is at Basel. It was erected by the city of Basel, containing only ninety thousand inhabitants, at a cost of one million three hundred thousand francs—an example that other cities might well emulate. The building, which is as nearly perfect as the most careful and thorough supervision could make it, was started under the care of Fehling and completed under that of Bumm, the present head of the institution.

10. *Jacobs's Clinic at Brussels.*—This is, I believe, the finest private clinic I have visited. It contains forty-five beds, divided into three classes:

1. For the poor who pay nothing.
2. For private patients of the middle classes.
3. For private patients of the higher classes.

The rooms for the last-named class are luxuriously fitted up, and have a small antechamber, where a relative of the patient can stay during the first days after a serious operation. The operating room is large and light, the floor of marble, the walls tiled about halfway up, the remainder enamel paint. There are two operating tables, both of brass; the one for vaginal work, the other for abdominal, with a Trendelenburg attachment. The vaginal table has two hollowed metallic pans, raised a little above the level of the table, on which the buttocks rest. By this arrangement, not only have the buttocks a fixed point of support, but the vulva is raised to a higher plane than the cervix, and solutions introduced into the vagina for purposes of disinfection do not immediately run out again. The leg supports are fastened to the table, about a third of the distance from the foot to the head of the table. This was introduced by Sänger, and enables operator and assistants to work unimpeded by the lower extremities of the patient. There is a well-fitted-up laboratory for chemical, microscopical, and bacteriological work. Every specimen is examined microscopically, and cultures are made from it. Jacobs keeps a number of guinea-pigs, whose peritoneal cavities he inoculates with pus in doubtful cases. He informed me that he frequently saw a tuberculous peritonitis resulting in the animal in cases where he could not otherwise have made the diagnosis of tuberculous infection. He has an artist continually engaged in making drawings and paintings of specimens. From time to time he publishes a journal giving the results of his work. He has four assistants, who aid him in his operations and in his scientific work. The clinic is under the management of a religious order, the Sisters of St. Anne. They have entire control, with the exception of the medical part. They provide the meals, as well as the nursing, which is done by members of their order. Jacobs gives them a certain amount annually for providing for his poor patients. His first assistant resides in the clinic, and has charge of the after-treatment. The other assistants are externes.

11. *The Paris Hospitals.*—They are all entirely supported by the city of Paris. That city, which probably does more than any other for the public welfare and pleasure, is still further burdened by having to support about forty medical institutions. Naturally, we can not expect them to be as well arranged as in other cities, where the hospitals are largely or entirely supported by voluntary contributions. And, as a matter of fact, however good the work may be, I think we must confess that most of the Paris hospitals fall far short of our standard modern hospitals. In hardly any of them are the wards what they ought to be. In a few of them, like the Clinique internationale, where Péan and Aubeau work, the Maison municipale de santé, and the Hôpital Necker, we find well-arranged modern operating rooms; but even here the men are hampered by lack of funds and consequent lack of assistants. The subjoined clipping is from a Parisian journal, and shows that even in a hospital like the Maison municipale, where every private patient is entitled to a nurse, there is a lack of funds to provide them.

(Translation.)

Paris, *September 17, 1896.*

To the General Director:

Sir: For several months I have wished to call your attention to the insufficient number of nurses at the Maison Dubois.

This morning I performed two very serious operations and the director informs me that he has no nurses to put at my disposition. To cover my responsibility I have been compelled to remain at the hospital, awaiting the arrival of the nurses whom I asked you for by telephone.

It is half past two, and I leave the hospital thoroughly disgusted with the want of care which the administration shows toward private patients of the Maison municipale, and the responsibility in this scandalous matter rests with you.

I wish to inform you that from to-day, the 17th inst., I shall perform no operation at the hospital until you arrive at a decision in this matter. Be assured, sir, of my distinguished consideration. Picqué.

If we stopped to reflect in what condition our many splendid hospitals, so liberally supported by philanthropic citizens, would be were they all supported merely by the city, we should, I think, applaud rather than criticise the good work Paris is trying to carry out.

12. *The London Hospitals.*—You cross the channel and you come to a different land with different people, different customs, and different ideas. So, too, are the hospitals differently arranged. They are almost entirely supported by voluntary contributions, the sum total of which, during the last year in London, is said to have reached five million pounds sterling. We have, then, a right to expect the hospitals to be better arranged than in Paris. The wards are very clean, neat, and well kept, in strange contrast to what one sees in Paris. But the operating rooms are not in strict keeping with the demands of modern asepsis—there is too much wooden furniture in them, in some there are not even stone floors. And then, again, some of the largest and best equipped hospitals have only one small, sometimes poorly lighted room set aside for operating purposes. In St. Thomas's, probably the best-equipped hospital in London, the gynæcological operations are performed in a tiny room behind one of the wards. In the Samaritan, a comparatively new hospital, I saw operations frequently performed in the rooms of the patients, with the usual furniture in the room and pictures on the walls.

The different medical schools have each a hospital which is largely used for teaching purposes. This is true of Guy's, St. Thomas's, King's College, the London, and others.

RESULTS FROM THE ADMINISTRATION OF IRON IN A READILY ASSIMILATED FORM AFTER GYNÆCOLOGICAL OPERATION.*

By C. A. VON RAMDOHR, M. D.,
PROFESSOR OF OBSTETRICS IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL; GYNÆCOLOGIST TO ST. MARK'S HOSPITAL AND THE GERMAN POLIKLINIK.

Some few months ago I had the misfortune of having a patient lose a comparatively large amount of blood after a trivial operation. In spite of the weakened condition of her stomach I tried iron, as the quickest acting tonic, to counteract her anæmia. The results were so extraordinarily good and her general appearance improved to such a degree that I decided to put all my patients on the use of the same preparation after any operation, and to carefully note the good or bad results of its administration.

To further guard against making any allowance to my enthusiasm, I had the blood of some patients at the New York Post-graduate Hospital tested by Dr. H. T. Brooks, the director of its pathological laboratory, and similar tests at St. Mark's Hospital made by the pathologist, Dr. George Lindenmeyr. Some cases were kindly loaned me for observation by Dr. H. J. Boldt, Dr. J. R. Nilsen, and Dr. Carl Beck, to all of which gentlemen I hereby once more acknowledge my indebtedness.

The preparation used in all cases was the peptonate of iron and manganese, made according to Dr. Gude's formula and known for short as "pepto-mangan Gude."

The results as found have shown me and will convince you that it is not only possible but highly beneficial to feed a patient on such tonic immediately after an operation and during her convalescence, as a routine treatment.

In only one case, that of a twelve-year-old girl, referred to me by Dr. Beck, an account of which is appended here, had the administration to be suspended because it was not well borne.

In no case was constipation observed, nor was the pepto-mangan taken with aversion.

The period of trial varies from twelve days to forty-four days. Quite a number of patients disappeared before the second examination of blood could be made.

There have been examined twelve gynæcological cases, among which is one check case. I append, however, as long as the examinations have been made by the pathologist, two general surgical and five medical cases.

Case I (Post-graduate Hospital), patient aged twenty-seven years. Ovariotomy. Time of administration, seventeen days. First count, 5,050,000 to the cubic millimetre; second count, 5,312,000 to the cubic millimetre.

Case II (Post-graduate Hospital), patient aged twenty-three years. Laparotomy. Time of administration, sixteen days. First count, 3,600,000 to the cubic millimetre; second count, 3,870,000 to the cubic millimetre.

Case III (Post-graduate Hospital), patient aged twenty-seven years. Alexander's operation. Time of administration, twelve days. First count, 4,437,500 to the cubic millimetre; second count, 5,670,000 to the cubic millimetre.

Case IV (Post-graduate Hospital), patient aged thirty years. Oophorectomy. Time of administration, twelve days. First count, 5,250,000 to the cubic millimetre; second count, 5,400,000 to the cubic millimetre.

Case V (St. Mark's Hospital), patient aged thirty-eight years. Excision of fibroid of cervix. Time of administration, twenty-three days. First count, 2,624,000 to the cubic millimetre; second count, 3,450,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, thirty-five per cent.; second examination, sixty per cent.

Case VI (St. Mark's Hospital), patient aged eighteen years. Miscarriage after pneumonia at fifth month. Curettage. Time of administration, twenty-four days. First count, 2,432,000 to the cubic millimetre; second count, 3,842,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, thirty-four per cent.; second examination, fifty-five per cent.

Case VII (St. Mark's Hospital), patient aged twenty-five years. Vaginal hysterectomy. Time of administration, fourteen days. First count, 2,962,000 to the cubic millimetre; second count, 3,264,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, thirty per cent.; second examination, forty-two per cent.

Case VIII (St. Mark's Hospital), patient aged twenty-three years. Pyosalpinx. Vaginal operation. Time of administration, twenty-four days. First count, 3,426,000 to the cubic millimetre; second count, 4,280,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, forty per cent.; second examination, sixty-two per cent.

Case IX (St. Mark's Hospital), patient aged twenty-one years. Emmet's operation. Time of administration, thirty-six days. First count, 2,351,540 to the cubic millimetre; second count, 3,740,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, thirty-five and a half per cent.; second examination, seventy per cent.

Case X (St. Mark's Hospital), patient aged thirty-seven years. Beck's operation. Time of administration, forty-four days. First count, 2,253,000 to the cubic millimetre; second count, 3,420,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, thirty-six and a half per cent.; second examination, fifty-five per cent.

Case XI (St. Mark's Hospital), patient aged twenty-one years. Laparotomy for pyosalpinx. Time of administration, twenty-three days. First count, 2,680,450 to the cubic millimetre; second count, 4,758,570 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, thirty-three per cent.; second examination, seventy per cent.

To convince himself and me that not all gynæcological patients would have their blood-corpuscles increased at the same rate after an operative interference as after taking pepto-mangan (Gude), Dr. Brooks has kindly made this check test in

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* Read before the Section in Obstetrics and Gynæcology of the New York Academy of Medicine, May 27, 1897.

Case XII (Post-graduate Hospital—control), patient aged twenty-eight years. Ovariotomy. Time in hospital, fifteen days. First count, 4,368,750 to the cubic millimetre; second count, 4,480,000 to the cubic millimetre.

Case XIII (St. Mark's Hospital), that of a girl, aged twelve years. Resection of tuberculous hip joint. Time of administration, seventeen days. First count, 1,865,420 to the cubic millimetre; second count, 1,760,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, thirty-two per cent.; second examination, thirty-two per cent.

This is the only case where the use of the preparation had to be discontinued because the stomach rebelled, and where no improvement appeared.

Case XIV (St. Mark's Hospital), that of a boy, aged fifteen years. Large punctured wound of thigh. Time of administration, fourteen days. First count, 2,480,000 to the cubic millimetre; second count, 3,200,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, thirty per cent.; second examination, forty-two per cent.

Case XV (St. Mark's Hospital), that of a man, aged thirty-seven years. Anæmia. Time of administration, twenty days. First count, 3,586,510 to the cubic millimetre; second count, 4,550,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, fifty-two per cent.; second examination, seventy-two per cent.

Case XVI (St. Mark's Hospital), that of a woman, aged twenty-four years. Anæmia following malaria. Time of administration, twenty-four days. First count, 3,242,654 to the cubic millimetre; second count, 4,422,500 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, fifty-two per cent.; second examination, seventy-five per cent.

Case XVII (St. Mark's Hospital), that of a woman, aged twenty-four years. Professional nurse. Anæmia. Time of administration, twenty-eight days. First count, 2,475,216 to the cubic millimetre; second count, 4,060,222 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, forty-two per cent.; second examination, sixty-two per cent.

Case XVIII (St. Mark's Hospital), that of a girl, aged nineteen years. Professional nurse. Anæmia. Time of administration, twenty-one days. First count, 2,640,100 to the cubic millimetre; second count, 4,125,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, thirty-nine per cent.; second examination, sixty per cent.

Case XIX (St. Mark's Hospital), that of a woman, aged twenty-five years. Professional nurse. Anæmia and gastric catarrh. Time of administration, thirty-five days. First count, 2,563,202 to the cubic millimetre; second count, 3,420,000 to the cubic millimetre.

Hæmoglobin (percentage of normal amount): First examination, forty-two per cent.; second examination, sixty per cent.

These last seven cases do not strictly come within the scope of my paper, but still I was loath not to bring them out, and I am glad that Dr. Lindenmeyr in his zeal picked out these last three cases of hospital nurses for an experiment. You see how rapid their improvement was from the objective figures, more rapid than that of the women operated on, and, I think, for the reason that a certain amount of exercise in the open air helped, on the one hand, and the direct loss of blood impaired the multiplication of corpuscles on the other hand.

However, from the foregoing you will, I hope, agree with me that (1) it is beneficial to immediately put a patient on whom an operation has been performed on the use of an easily assimilated iron preparation, and (2) pepto-mangan (Gude) seems to be such a rational ideal pharmaceutical preparation.

45 Irving Place.

PEMPHIGUS.*

By A. C. BRIDGES, M.D.

Pemphigus is defined as an acute or chronic inflammatory disease characterized by the formation of a succession of rounded, irregularly shaped blebs, varying in size from a pea to an egg (Duhring).

There are two stages of the disease, acute and chronic.

The acute is most often met with in children, especially newborn infants. It has been often described as a contagious disease, as it appeared in some lying-in hospitals. It is probably not contagious, and the error is no doubt due to considering some other skin diseases as pemphigus, such as varicella bullosa, herpes iris, urticaria bullosa, and impetigo contagiosa.

Acute pemphigus appears as an acute febrile disease, accompanied by the formation of blebs, or "bullæ," which have no special arrangement on the body, and vary in number and somewhat in size.

The contents of the blebs are generally clear and viscid. There may be loss of appetite, fever, vomiting, and diarrhœa.

The acute stage lasts about eight to fourteen days, when the blebs form less abundantly, dry up, and heal, leaving the skin as healthy as before. The total duration may be even a few weeks before the surface is entirely clear.

This disease has, no doubt, been often mistaken for varicella, which it very much resembles, but requires the course of the disease to distinguish it. It requires no special treatment.

In chronic pemphigus we have two varieties—pemphigus vulgaris, which is the most usual form and perhaps the most benign, and pemphigus foliaceus, with which we seldom come in contact.

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* Read before the Society of the Alumni of the City (Charity) Hospital, March 10, 1897.

In the former the blebs are well filled, raised, with the surrounding skin healthy. They vary in size from a pea to an egg, and even may become larger if two or more coalesce. They seldom rupture, but dry up, and the skin returns to its former condition if no new crops appear. The fluid may be clear, turbid, bloody, or even purulent. The entire surface of the body may be involved, but there is always the tendency to repair.

In pemphigus foliaceus the blebs are flatter, the covering is less tense, and with less fluid contents, but they may become even larger than in the other variety. They show little or no tendency toward repair, but recur even before the old blebs are healed. The blebs seem to flatten out more into the surrounding skin. They are more deeply situated over the papillary layer, and when the fluid escapes leave a greater or lesser area of reddened, excoriated surface.

In pemphigus the "vesicles" usually form as red spots, which appear on the healthy skin; sometimes they seem to develop as white spots or vesicles, without any hyperæmia. They very quickly terminate in the characteristic blebs. They vary in size, as above stated.

The blebs are generally reddened at their bases, or they may sometimes form as "wheals," bases elevated as well as the bleb itself.

It requires from two to eight days for the blebs to develop fully and begin to disappear. Others may form on the seat of the old ones, which keep up the eruption.

There are usually acceleration of the pulse, fever, burning and itching of the skin.

This variety (pemphigus vulgaris) may terminate fatally if the blebs are large, form rapidly, and leave the surface of the skin exposed and excoriated. The symptoms are then those of exhaustion.

Ætiology.—The causes of pemphigus are not well established. By some they are considered as dependent upon the general condition of health, and are more liable to occur after long illness or wasting diseases.

Sometimes it seems as though the nervous system might be alone involved, but it does not develop more often in diseases of the nervous system. Pathological changes have been discovered in cases of pemphigus; these have been found in the posterior columns of the cord. It has developed during pregnancy, to disappear after delivery. It has also appeared after severe mental distress, as well as after injuries and operations, as in the following case.

The disease is not contagious, nor is there hereditary transmission. Bacteria have been discovered in the contents of the blebs by Gibier and others, but probably have no significance.

Pathology.—The blebs usually appear on the healthy skin as red spots, which become elevated and fill rapidly with fluid. The blebs consist of an elevation of the superficial layers of the skin from fluid poured out of the capillaries of the papillary layer, where there is generally hyperæmia and a swollen condition. The general skin surface may be thicker on account of this congestion.

The reaction of the fluid contents of blebs is generally neutral or alkaline, and may contain pus cells as well as red blood cells, depending upon the nature of the liquid. Sometimes the fluid is clear serum containing albumin. Nothing significant has been determined from the examination of the urine.

Edward M., United States, aged thirty-eight years; telegraph operator. There is nothing in the family history which would predispose to the disease.

When a child, the patient sustained a crushed wound of the right foot which left a considerable deformity. Since that time the foot has been flexed somewhat on the leg, with the heel turned outward. On this account the patient has been compelled to support part of his weight in walking on the heel.

About ten years ago an ulcer appeared over the exposed surface of the heel, which eventually covered most of the inner surface of the heel. This extended quite deeply, and was formed of large and high granulations. This ulcer has never healed, even under treatment, and has given the patient considerable pain and inconvenience.

The right limb has been smaller than the left as the result of the injury.

The condition of the foot was so serious that amputation was advised, and accordingly performed in Roosevelt Hospital, September 19, 1892.

The point selected was at the junction of the middle and lower thirds.

The union was good and the result satisfactory. The condition of the patient was quite good at the time of the operation. The patient returned to work after about four weeks.

I was next consulted on account of an eczema of the under surface of the stump. This did nicely under three-per-cent. ichthyol and oxide-of-zinc ointment.

Soon after this time, and about six weeks after the operation, I noticed a few vesicles over the skin of both legs. These were characteristic of the disease which I have described, but I directed no especial treatment at this visit. I was next called to see the patient at his home, when I found the condition exaggerated and blebs rapidly extending. He was in bed, weaker than when I last saw him, and suffering from restlessness and pain in the skin of the limbs and trunk.

I found the blebs much larger, running together in many places. The eruption had not spread to the face or head; the surface was not yet entirely covered with the blebs; the blebs formed quickly, and were tense, well filled, elevated, varying in size; the contents generally clear in the new-formed vesicles, but becoming turbid in the older ones, and after their escape sometimes forming crusts and scales. The surface of the skin generally was moist.

December 13th.—Trunk as well as extremities almost completely covered by the blebs. Eczema of stump almost healed, but covered with a dry crust. The trunk is almost one continuous red, weeping surface, tender, burning, and painful. There are but few remaining blebs that are separate and distinct. At this time there seems very little tendency to repair; as soon as the older blebs disappear new ones form; the blebs do not yet involve the neck and face, only one here and there.

The eyelids and conjunctivæ are red and weeping.

There is no evidence of eruption in the mouth or fauces; the nasal passages are dry, and the patient breathes with difficulty through the nose. The tongue is coated and flabby; the bowels move only after the use of cathartics. There is no appetite, and very little nourishment is taken. Temperature, 101°; pulse, 100; respiration, 20. Ordered eight drops of liquor potassii arsenitis every six hours.

14th.—Temperature, 101.5°; pulse, 108; respiration, 22. Condition not much changed. Powdered starch applied to the body.

15th.—Acting upon the suggestion of Dr. George T. Elliot (who saw the case with me), lint saturated with six-per-cent. of ichthyol in carron oil was applied to the entire surface, and the Fowler's solution continued every four hours. Temperature, 102°; pulse, 112; respiration, 24.

The burning and heat of the skin are lessened, the surface is cleaner than with the use of the powder, and there is less formation of crusts. The patient is quite thirsty, bowels move after salines, and the urine passes freely. Ordered a sixth of a grain of morphine sulphate on account of restlessness and insomnia. Eyes quite involved, some muco-purulent discharge and crusts on the margins of the lids; washed with saturated solution of boric acid.

16th.—The general condition seems somewhat improved; patient slept some during the night, but has vomited once this morning. There are new blebs appearing on the skin, but these soon rupture. Vesicles more numerous on the face and forehead. Temperature, 103°; pulse, 100; respiration, 26. Ordered three grains of quinine sulphate every four hours, and twenty grains of potassium bromide, to be repeated in two hours, if not resting easier.

17th.—Temperature, 102.8°; pulse, 118; no change in the condition.

18th.—Temperature, 100.8°; pulse, 112; respiration, 24. The skin is very dry and tender; face and forehead almost covered with blebs; no tenderness yet over scalp. The patient has a little cough. Urine moderate in amount, clear, straw-colored. Specific gravity, 1.004; no albumin; no sugar; no casts.

19th.—Temperature, 101.4°; pulse, 116; respiration, 29. Patient is easier; slept some during the night; new blebs still forming.

20th.—Temperature, 101°; pulse, 112. Very few new bullæ. The bowels move without medicine.

21st.—Temperature, 100.8°; pulse, 112. Patient easier, less tenderness of the skin. The tongue is not so coated and is moist. Still no vesicles or redness in the throat. Urine, 1.006, otherwise same as at first examination. Ordered three grains of quinine sulphate three times a day, eight drops of arsenic every three hours, and a fifth of a grain of morphine sulphate when required to ease the pain or distress.

23d.—Temperature, 101°; pulse, 116. Some vesicles on the scalp. There is still the general redness of the trunk and extremities, with the formation of a few new blebs. Ichthyol reduced to four per cent., and half an ounce of whisky three times a day ordered on account of the increasing prostration.

26th.—The condition is much the same.

27th.—A few small pustules have formed out of the blebs on the dorsal surfaces of some of the fingers. The patient is delirious.

28th.—The condition is getting worse. Pulse, 120; delirious, vomiting, and the bowels are loose.

Discontinued the arsenic and quinine, and gave five grains of phenacetine and eight grains of potassium bromide every four hours.

29th.—No change for the better.

30th.—Weaker, delirious, low temperature, pulse, 124.

January 1, 1893.—Condition about the same.

2d.—Pulse 140, takes little nourishment, and is vomiting.

Patient died of exhaustion at 11 P. M.

Autopsy not allowed.

Diagnosis, pemphigus vulgaris, with a tendency toward pemphigus foliaceus.

THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM AND ITS CONSTITUENT NEURONES,

AS REVEALED BY RECENT INVESTIGATIONS.

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(*Continued from page 821.*)

ANOTHER feature characteristic of the dendrites of some nerve cells deserves more than passing notice. Upon the surface of the processes it is possible to make out minute lateral buds, which, although too small perhaps to deserve the name of branches, are still definite histological structures, probably of no mean significance. On the dendrites of the pyramidal cells (Fig. 24) of the cerebral cortex and upon those of the Purkinje cells, in the cerebellum (Fig. 25) these lateral projections are very numerous and constant in silver preparations of healthy tissue. They are not unlike the projections into the liver cells from the bile capillaries, as revealed by Golgi's method, but appear in far greater numbers. Berkley,

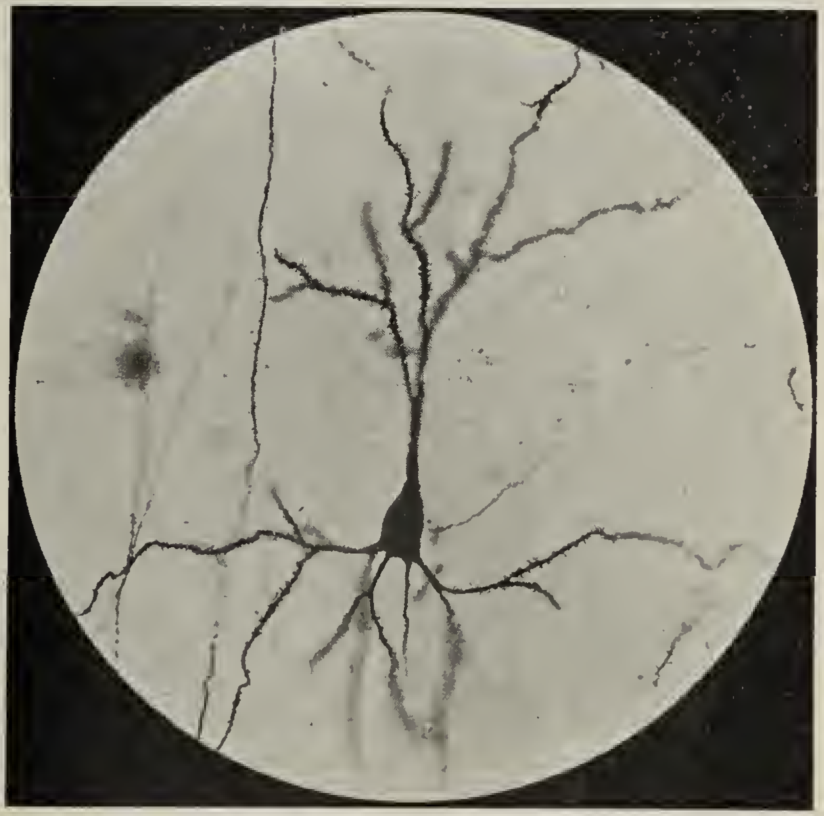

FIG. 24.—Photomicrograph of a normal pyramidal cell from the cerebral cortex of the guinea-pig. (After Berkley.) The single-branched apical dendrite and the basal dendrites show distinctly the lateral buds or "gemmules." The axone is relatively smooth.

who has named these processes "gemmules," * thinks they are of very great significance for the contact of different neurones with one another (Fig. 26) and thus for the transference of impulses from neurone to neurone.

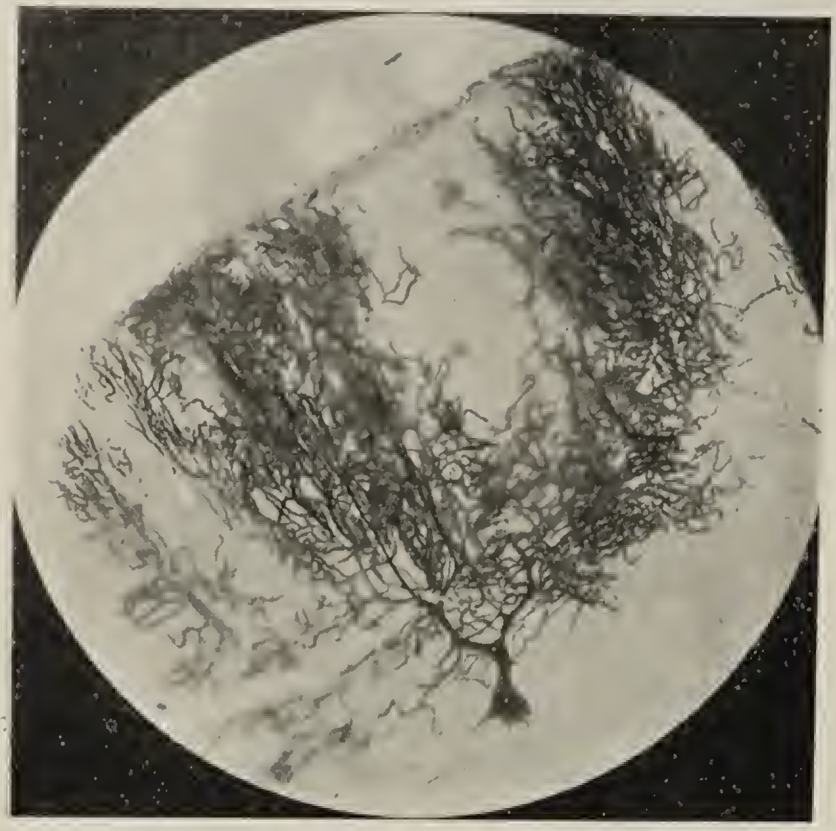

Fig. 25.—Photomicrograph of a normal Purkinjé cell from the human cerebellar cortex. (After Berkley.)

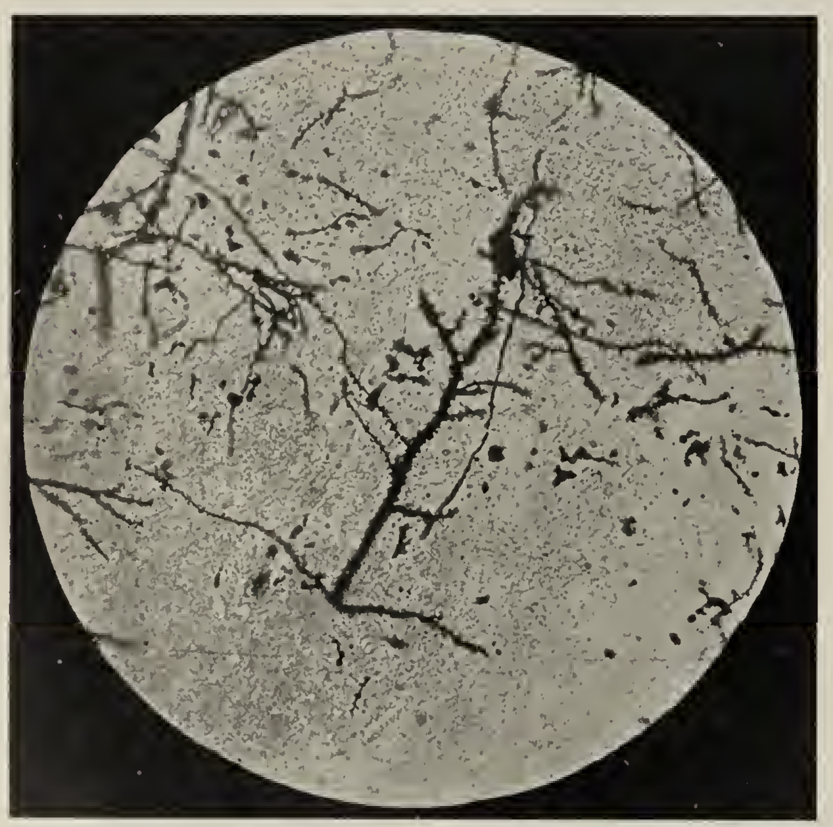

Fig. 26.—Photomicrograph of the apical dendrites of a large pyramidal cell of the cerebral cortex showing the arrangement of the lateral buds or gemmules. (After Berkley.)

He asserts that in certain diseases, particularly in certain intoxications, it is these "gemmules" which are the portions of the neurone which first suffer, and he has even suggested that in paralytic dementia, for example, the early symptoms may be explicable by assuming the destruction of large numbers of these gemmules. It has been objected that these lateral buds are demonstrable only by Golgi's methods, and that therefore one should hesitate before deciding that they are more than artefacts. That they are not artefacts, however, would seem clear from the constancy of their appearance on the dendrites of certain only of the nerve cells, from their entire absence from those of certain others, and from the fact that they are most apparent and more sharply defined in the most successful impregnations. Moreover, Ramón y Cajal * has been able to demonstrate beautifully these lateral buds on the dendrites of the pyramidal cells of the cerebral cortex by means of the "vital staining" with methylene blue, and has pictured them in Fig. 1, *a* of his article. These appearances can, therefore, be no accident, but whether the interpretations thus far advanced as to their significance are correct or not further knowledge and experience must determine.

The axis-cylinder processes or axones † of nerve cells differ markedly in many ways from the dendrites. The appearances presented by an axone in Golgi preparations are so characteristic that after a little experience the observer will rarely have the slightest difficulty in distinguishing it from adjacent dendrites; indeed, a few days' study with the microscope of successfully impregnated specimens will do more to convince the student of the differences in type of dendrites and axones than will many pages of careful explanation.‡ On analysis, however, the structures admit of differentiative description. The axone differs from the dendrite in its mode of origin from the cell body, in its contour and calibre, and in its course and mode of branching; further, if long, it is usually medullated, and also shows differences in its accessory processes and in its method of termination.

Arising embryologically through a prolongation of the stem of the pear-shaped neuroblast (*vide infra*), in the adult the axone comes off from the cell body or from a dendrite (Fig. 27), in the latter case usually near the cell body, though sometimes at a long distance from it, by a narrow wedge-shaped beginning. This mode of origin makes the axone appear to be a more independent structure than the dendrite, since the latter, as is obvious from its broad, wedge-shaped origin and from the nature of its contents, is simply an expanded portion of the body of the nerve cell. That the axone is, however, also a direct expansion of the protoplasm of the cell body there can be no doubt, although, as will be pointed out later, certain substances, those which account in tissues fixed in alcohol for the so-called Nissl bodies, present in considerable amount within the cell body and dendrites appear to be entirely absent in the axones, or to be present in them in such small quantities as to escape detection by the methods at present employed for demonstrating them.

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* The selection of the term "gemmules" to designate these lateral buds is not entirely free from objection, inasmuch as this is the same word as was used by Darwin in connection with heredity as a name for the minute elements which, according to his theory of pangenesis, are given off by the cells in different parts of the body, to be taken up later by the sexual cells.

* Ramón y Cajal, S. Las Espinas Colaterales de las Células del Cerebro Teñidas por el Azur de Metileno. *Revista Trimestral Micrográfica*, vol. i, fasc. 2 y 3, Agosto, 1896, p. 123.

† Kölliker's *Neuraxon* is well shortened to the more simple *axone*, a term convenient and not likely to lead to any confusion.

‡ It must be admitted, however, that in certain regions—for example, in the sympathetic ganglia and in the plexuses of Meissner and Auerbach—the dendrites and axones may resemble one another so closely that they can only with considerable difficulty be distinguished from one another.

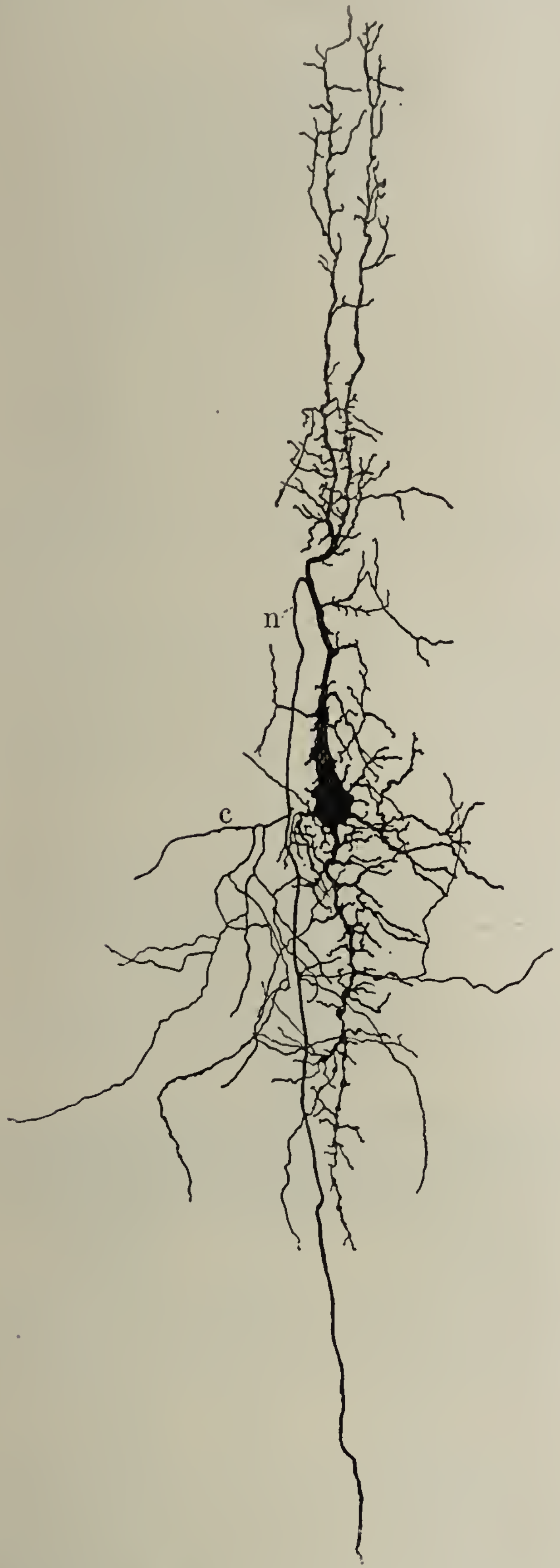

Fig. 27.—Neurone from the optic lobe of the embryo chick. (After Kölliker.) The large dendrite running toward the periphery of the lobe gives rise to an axone, *n*, which runs toward the centre, giving off in its course several collaterals. One of these, *c*, is much branched.

The calibre of the axones varies much for the different cells, corresponding in general to the length of their course, a point which Schwalbe early pointed out and von Lenhossék has recently emphasized. Unlike that of the dendrite, its calibre is, as a rule, maintained for a considerable distance from the cell. Even in the dendraxones (Golgi's cell, Type II; Kölliker's *Neuropodien*) the axone is sufficiently well characterized in this respect to permit easily of its identification (Fig. 28).

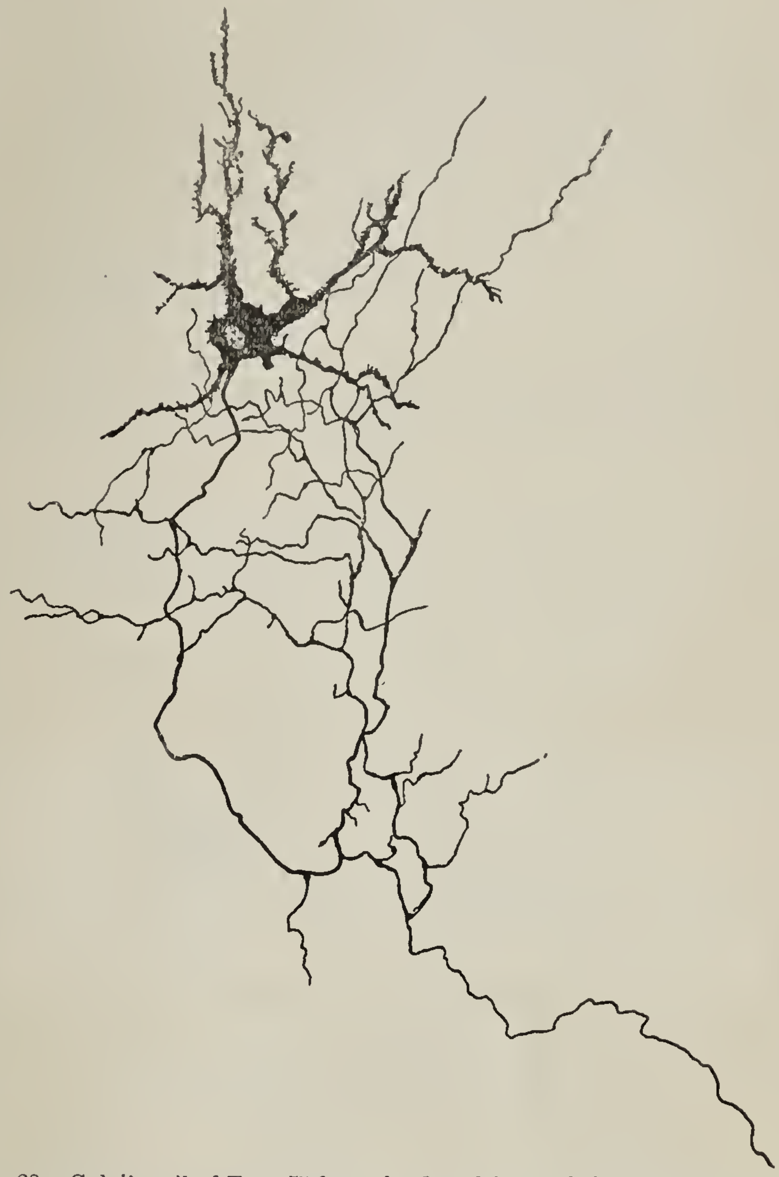

Fig. 28.—Golgi's cell of Type II from the dorsal horn of the gray matter of the spinal cord of the newborn mouse. (After von Lenhossék.) Even n such a dendraxone the axone is very easily distinguishable from the dendrites The latter are only represented in part in the illustration.

We are often deceived from its narrow calibre as to the volume of an axis cylinder. This may be as much as a hundred and eighty-seven times that of the cell body (Donaldson).

The surface of the axone is smooth, its contour regular, and its course, as a rule, direct, so that in most instances the trained eye can recognize it at first glance standing out sharply like a piece of black thread on a white or yellowish ground. The axones do not always take, however, the course to their destination which appears to be the shortest, and the origin of some of the curves and digressions is difficult to understand.

The length of the axones is in the highest degree variable. In the dendraxones, where dendritic branching of the axone occurs soon after its departure from the cell, the total length before complete loss of individuality may amount to only a few millimetres, or even to a fraction of one millimetre. On the other hand, the axones of some of the motor neurones are fully half as long as the height of a man. Between these two extremes there is every possible degree of variation.

The neurones with long axones (Inaxones of von

Lenhossék, Golgi's cells of Type I, Kölliker's *heteropodere Nervenzellen*), as a rule, are monaxones—that is, they possess only one axone, though the spinal ganglion cells may, histologically at least (*vide supra*), be regarded as diaxones. There are neurones, too, which possess several axones. Among these, the so-called polyaxones, are the Cajal cells of the outer layer of the cerebral cortex of certain animals (Figs. 29 and 30), from whose horizontal dendrites as many as four or even more branches may be given off which possess all the external characters of delicate axones.

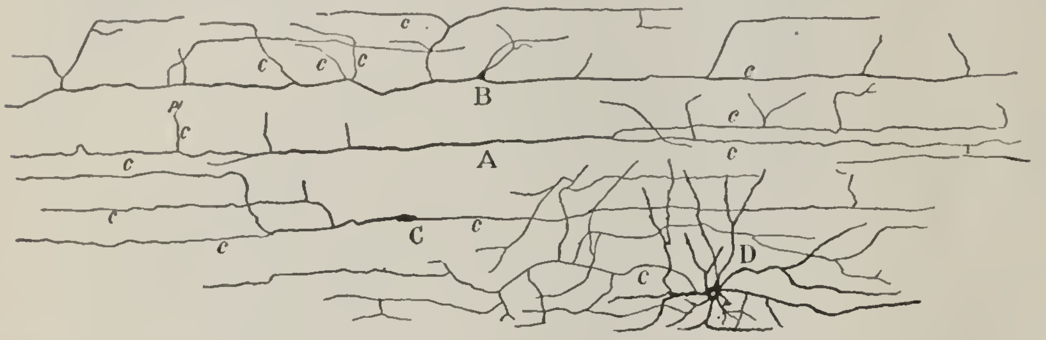

Fig. 29.—Special cells (polyaxones) of molecular layer of cerebral cortex of a dog, one day old. (After Cajal.) *A*, fusiform cell; *B*, triangular cell; *C*, another fusiform cell; *D* polygonal cell with numerous dendrites and an axone which divides repeatedly; *c*, axones.

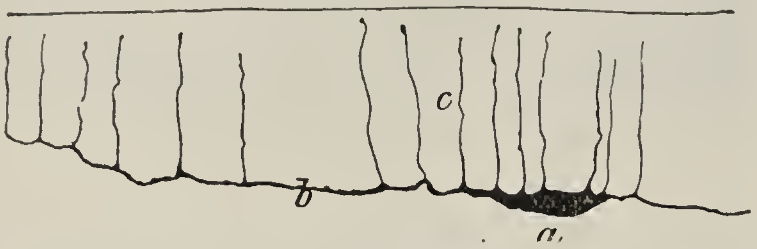

Fig. 30.—Cajal's cell from the superficial layer of the cerebral cortex of a fœtal cat. (After Retzius.) *a*, cell body; *b*, dendrite; *c*, axones.

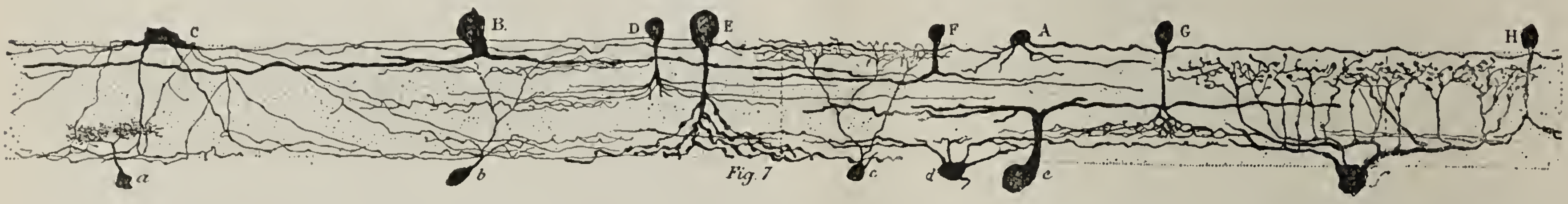

Fig. 31.—Nerve elements from the retina of the ox. *A*, half-moon-shaped amacrine cell (anaxone); *B*, large amacrine cell with thick branches; *F*, smaller amacrine cell; *D*, amacrine cell with radiating branches; *G*, *H*, *E*, other amacrine cells; *c*, peculiar kind of amacrine cells with very thin branches; *a*, small ganglion cell of the fourth layer; *b*, ganglion cell, the branches of which form three plexuses lying over one another; *c*, small ganglion cell; *d*, ganglion cell of medium size; *f*, ganglion cell resembling closely that met with in reptiles and birds; its branches form two plexuses, one in the fourth and one in the second sublayer; *e*, giant ganglion cell of the third sublayer. (After Ramón y Cajal.)

According to Ramón y Cajal, many of the sympathetic ganglion cells laid down in the viscera—for example, those of Auerbach's and Meissner's plexuses—possess several axones. Anaxones, neurones which appear to be absolutely devoid of axis-cylinder processes, occur in the nuclear layer of the olfactory bulb, in the retina (Fig. 31) (*cellules amacrines* of Cajal), and as von Bechterew has pointed out, within the baskets of the Purkinje cells of the cerebellum (Fig. 32).

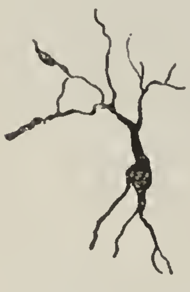

Fig. 32.—Anaxone from the basket of a Purkinje cell of the cerebellar cortex. (Method of Golgi; after von Bechterew.)

To axones which in their course divide into two equal or nearly equal branches—for example, the Y-shaped divisions of the central axones of peripheral sensory neurones after their entrance into the central nervous system—the name of schizaxones has been applied (Fig. 33).

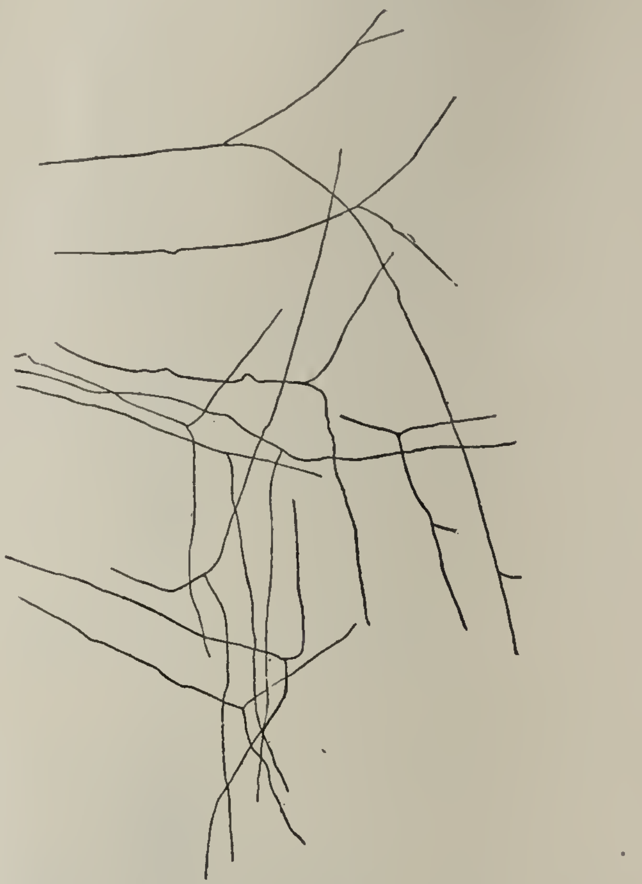

Fig. 33.—Y-shaped division of sensory root fibres after entrance into the spinal cord. Six-months human embryo. (After Kölliker.) Axones which undergo such a division are called by von Lenhossék schizaxones.

The ultimate terminals (telodendrions) of the axones have been carefully and exactly studied in great numbers of instances, and nearly all observers agree that every axone invariably ends "free." The termination of a branch of an axone by means of a definite end arborization about a single cell (Fig. 34) occurs, though not so frequently as many writers would lead one to think. The common mode of ending is by exhaustion through multiple division, this division being often spread over quite a wide domain, so that the terminal branches of a single axone not infrequently come into the neighborhood of the dendrites and cell bodies of a considerable number of different neurones. It may not be superfluous to emphasize this fact, inasmuch as a great many diagrams hitherto published in text-books and not a few descriptive articles are entirely misleading; the intimate interdigitation or interweaving of the terminals of one axone exclusively with the dendrites of a second neurone, so frequently pictured, very rarely occurs, except in a few localities, as, for instance, in the olfactory glomeruli of some animals (Fig. 35). It is much nearer the truth to think of one neurone coming by means of the terminals of its axone or axones into contact with, and thus perhaps being put into a condition to influence the processes or cell bodies of a few or of many other neurones (*vide infra*, "avalanche conduction" of Cajal). In the accompanying figure, which illustrates the terminal sensory nucleus of the trigeminus in the cat, the distribution of axones over a considerable area is clearly shown (Fig. 36); in Fig. 37 and in Fig. 38, the manifold branchings of some of the end ramifications of axones are demonstrated.

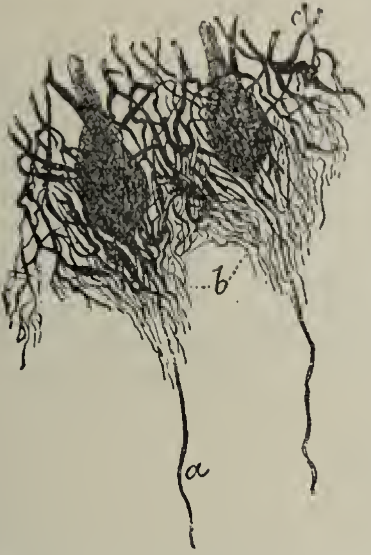

FIG. 34.—End ramifications forming a basketwork about two Purkinje cells of the cerebellar cortex. (From Schäfer, after Ramón y Cajal.) *a*, axone; *b*, basketwork.

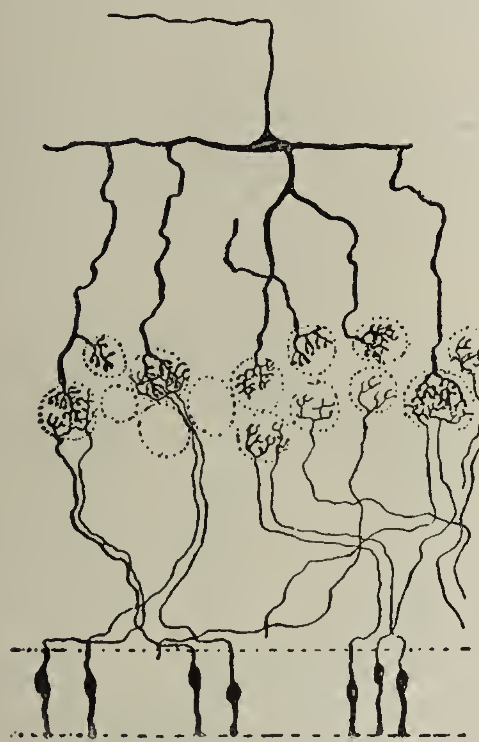

FIG. 35.—Scheme showing the relations in the olfactory glomeruli of the axones of the olfactory neurones of the first order to the dendrites of the mitral cells in birds. (After Van Gehuchten.)

A number of curious forms of termination have been described in various parts of the central nervous system. One of the most interesting of these is that shown in Fig. 39, which illustrates the mode of termination of the so-called "climbing fibres" in the cerebellar cortex. Many other modes of termination—for example, the disc-like expansions to be seen in Meissner's corpuscles and in the tactile discs in epithelial surfaces (Fig. 40)—might be mentioned. It is to be remembered that within the central nervous system the terminals of the axones and collaterals may, in some instances, come in direct contact with the bodies of other neurones (*vide* Fig. 34), in other instances the second neurones are influenced through their processes.

In the majority, although not all, of the inaxones the axis-cylinder processes are in the greater part of their course inclosed within a sheath. Dendraxones, being for the most part entirely within the gray matter of the central nervous system, possess axis-cylinder processes which are devoid of such a protective covering. In the majority of peripheral spinal and cerebral nerves this covering consists of a relatively thick fatty layer forming the myelin sheath, external to which is a cellular layer, the neurilemma. Henle's sheath is the fibrous tissue often present external to the neurilemma. Within the central nervous system the myelin sheath is present, but the neurilemma appears to be absent. The sympathetic nervous fibres possess no myelin sheath, but are surrounded by a protecting layer of long, flat cells forming a sort of neurilemma. It is not my purpose here to refer in detail to the histology of these various sheaths of the axone; they have long been carefully studied, and are described at length,

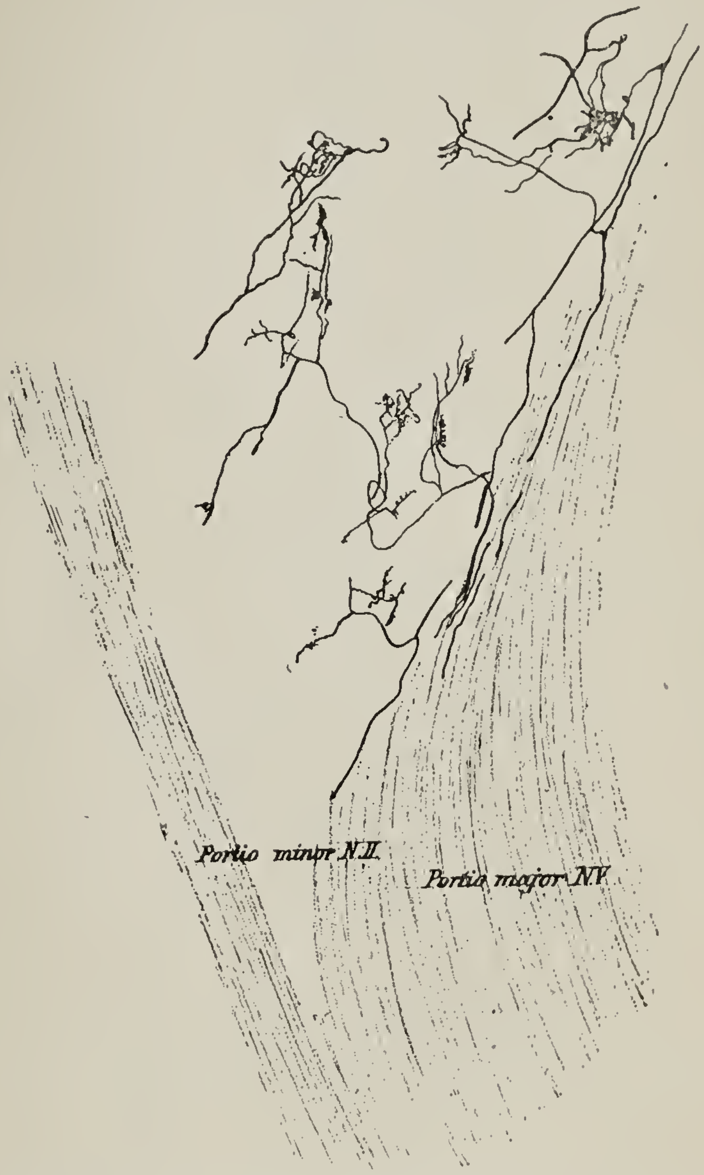

FIG. 36.—Nucleus of termination of the sensory part of the nervus trigeminus of the cat. (After Held.) The end ramifications of the single axis cylinders are seen to be distributed in widely separated areas, so that impulses coming along a single fibre to the nucleus may come in contact with a large number of neurones of the second order.

and, as a rule, correctly, in the text-books. I would only point out that the discovery of the fact that within the brain and spinal cord the axones of neurones destined for different functions receive their myelin sheaths at different periods in developmental history, and its application as a means of analysis of nerve tracts, forms the basis of Flechsig's embryological methods. The work done upon these lines belongs to one of the most important epochs in the development of methods of neurological investigation, and to the application of Flechsig's method to the study of some of the higher nerve centres I shall later take occasion to refer. The portion of an axone nearest the cell body is with some exceptions devoid of myelin, as are also its terminal ramifications (motor end plates and naked telodendrions within the central nervous system).

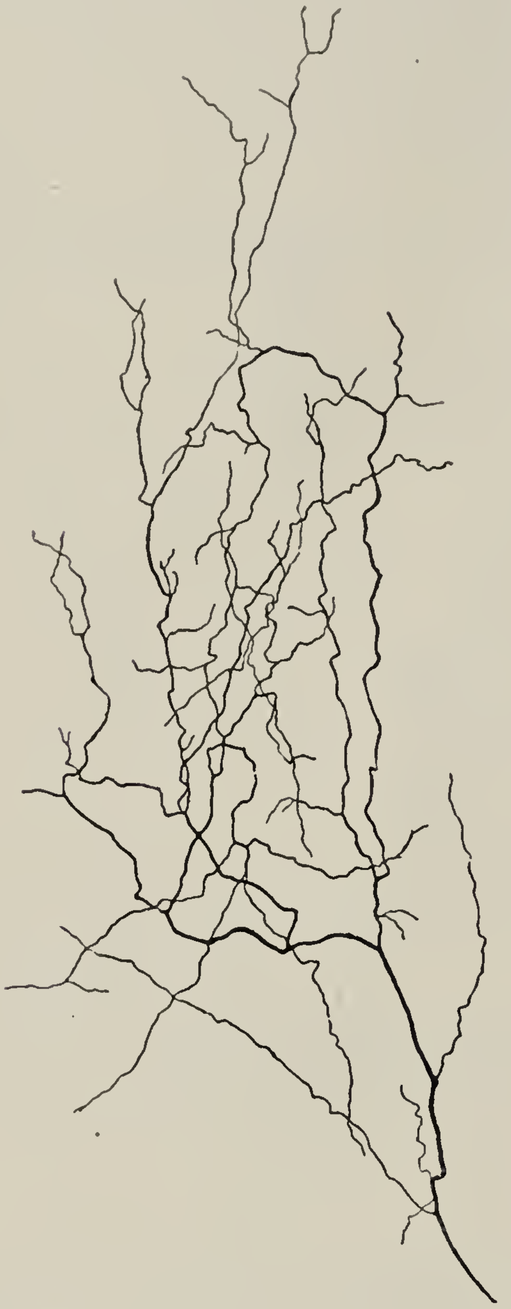

FIG. 37.—A much-branched fibre from the optic thalamus of a mouse. (After Kölliker.)

Besides the main divisions of axones above described, the accessory branchings of the axones, the collaterals (von Lenhossék, *Paraxonen;* Retzius, *Cylindrodendriten*), must be considered. In Golgi preparations the point of origin of a collateral from the axone is usually marked by a slight thickening. In the spinal cord, collaterals from the fibres of the dorsal roots and from the fibres of the white fasciculi run in at different levels in great numbers into the white substance, so that a given nerve fibre may be connected not only with the gray matter in which its axone finally terminates, but accessorily by means of its collaterals with the gray matter of very many segments of the cord intervening between its origin and ultimate termination, a fact of incalculable importance in the explanation of roundabout conductions and of manifold reflex activities. According to von Lenhossék, and my own studies thus far support his statement, the portion of the axone nearest its cell of origin—that is, the cytoproximal portion—possesses many more collaterals than that distant from the cell body; indeed, the cyto-

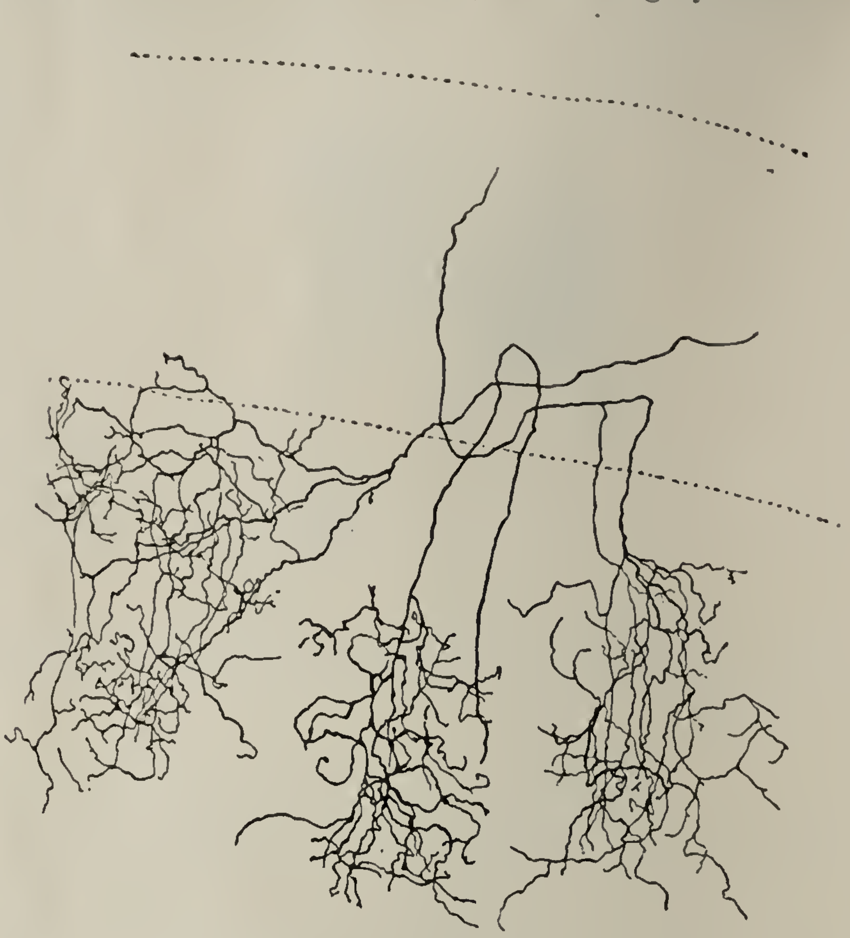

FIG. 38.—Three end arborizations of optic fibres from the optic lobe of an embryo chick. (After Kölliker.)

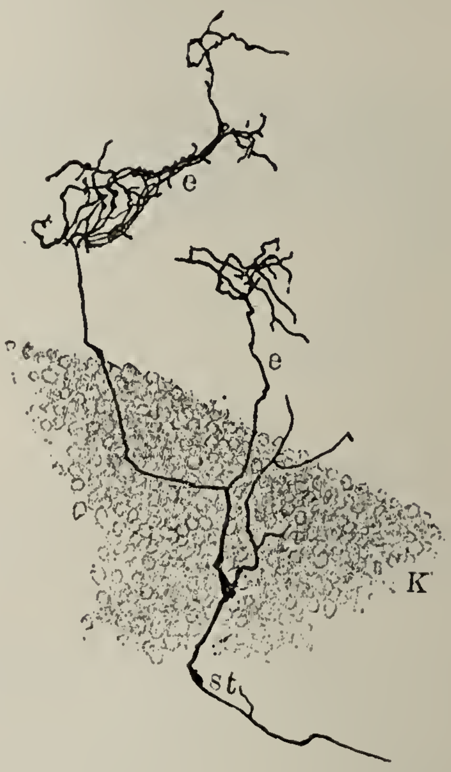

FIG. 39.—The so-called "climbing fibres" of the cerebellar cortex from the brain of a child a month and a half old. (After Kölliker.)

distal portion of the axone may be almost or entirely devoid of collaterals. Owing to technical difficulties, the number of collaterals which may be given off by a single axone has never as yet been satisfactorily determined. Kölliker, in a longitudinal section of the spinal cord a few millimetres long, counted as many as nine collaterals from one fibre. It will be remembered that some of the posterior root fibres extend from the lumbar cord as far as the medulla oblongata, though it would be incorrect to calculate the number of collaterals *pro rata*, since, as has just been said, the cytodistal portions of the axone appear to be entirely free from accessory branchings. Von Lenhossék, who has made exhaustive studies of the spinal cord, including that of human beings (Fig. 41), has never been able to find collaterals in the fasciculus gracilis Golli and does not believe that they exist there. Moreover, the number of collaterals varies much, not only for axones of the same fasciculus, but also and more particularly for the axones of different systems. In the dorsal fasciculi of the spinal cord, von Lenhossék has shown that the collaterals are most abundant in the entry zone; they are very numerous in the middle and ventral parts of the fasciculus cuneatus Burdachi, but occur in much smaller numbers in its dorsal peripheral part; and in the fasciculus gracilis, as has just been pointed out, they appear to be absent altogether. That they are absent in the fasciculus gracilis must not be taken to mean that these axones are entirely deprived of collaterals, inasmuch, as is well known, those belonging to the fibres constituting the fasciculus gracilis represent axones of dorsal root fibres, which lower down have run for some distance in the fasciculus cuneatus and only after a longer or shorter course within the cord have passed over, or have been pushed over through the entrance of more fibres from dorsal roots higher up, into the fasciculus gracilis. That there are axones, however, which have no collaterals seems very probable, and this is true for many axones of ventral horn cells and of the optic and olfactory peripheral sensory nerves.

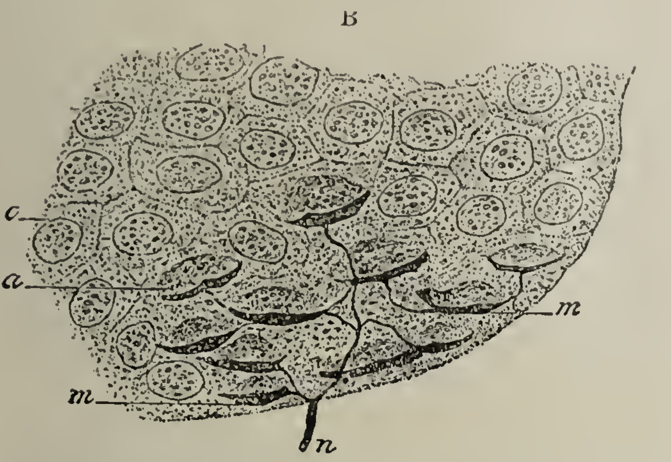

Fig. 40.—Disc-shaped expansions on nerve fibrillæ of the pig's snout and their relation to certain of the epithelial cells. (From Schäfer, after Ranvier;) *n*, nerve fibre ; *m*, meniscus or disc ; *a*, epithelial cell in contact with disc. *e*, ordinary epithelial cell.

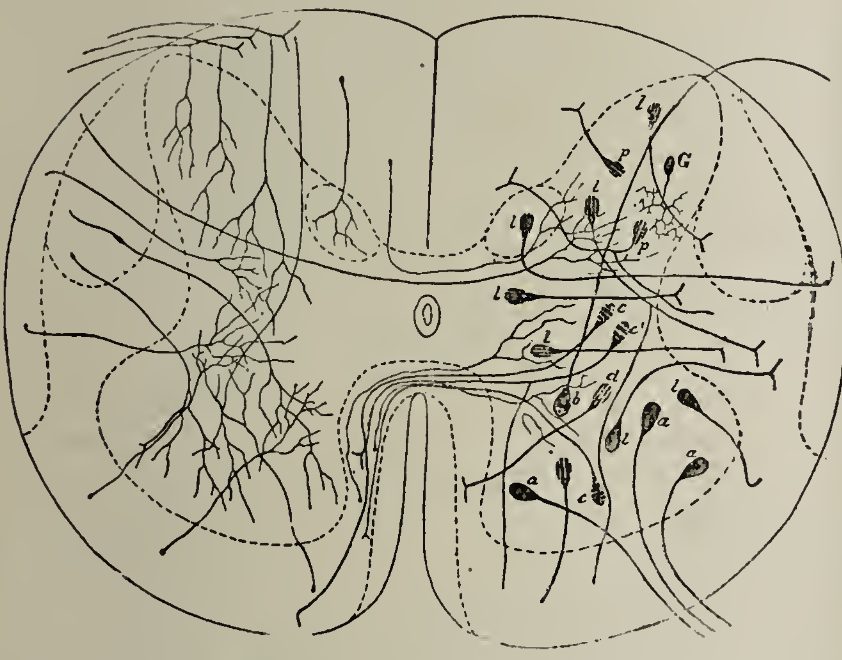

Fig. 41.—Scheme showing the elements of the gray matter of the spinal cord On the left are shown the terminal axones and collaterals entering the gray matter from the white substance ; on the right are to be seen the different nerve cells of the gray matter. (After von Lenhossék as modified by van Gehuchten.) *a*, ventral horn cells whose axones go into the ventral roots of the spinal nerves ; *b*, cell whose axone passes into the dorsal root of the spinal nerves ; *c*, *c'*, *d*, *l*, *p*, cells whose axones pass to the fasciculi of the white matter ; *c*, heteromeric neurones ; *c'*, hecateromeric neurone ; *d*, *l*, *p*, tautomeric neurones ; *G*, Golgi's cell Type II, or dendraxone.

The collaterals are often, it might perhaps be said generally, medullated, and an immense number of the very fine fibres revealed by Weigert's method within the gray matter of the central system represent medullated collaterals. A great step forward was made when it became possible to recognize that the great mass of medullated fibres passing in from the dorsal funiculi of the cord did not represent the terminal branches of the fibres of the dorsal roots, nor even the main stems of these fibres on their way through the cord. The majority of these fibres represent collaterals and are not main branches of dorsal root fibres, the latter passing on up in the dorsal funiculi. Thanks to the extremely careful studies of von Lenhossék, Ramón y Cajal, and Kölliker, which supplement the embryological investigations of Flechsig, we are now able to recognize very different groups of these collaterals, including the reflex collaterals and others, groups differing in origin, in their methods of termination, and, most interesting of all, probably in function. This new classification is destined to go far in rendering clearer the pathology of the spinal cord—indeed, has already done much to elucidate many obscure problems.

The free ending of the collaterals like that of the terminal axones is to be insisted upon (Fig. 42). After repeated division each little fibril runs out into a terminal end point which occasionally, though not always, appears slightly knobbed. The collateral may thus come in contact, by virtue of its end arborization, with the processes of several other neurones, and here as before the diagrammatic representation of collaterals surrounding exclusively the cell body or dendrites of a single neurone is to be emphasized as misleading. While it can not be denied that such a means of ending may occur, it is at least certain that it is not the only one, nor, I think, the most common. The importance of recognizing the real method of termination becomes more obvious in the consideration of the simultaneous affection of a whole series of neurones belonging to one functional neurone group. As to whether collaterals can be distributed in domains in which they can come in contact only with the side fibrils or collaterals of *axones* of other neurones, I shall have something to say when discussing the possible functions of the different parts of the neurones.

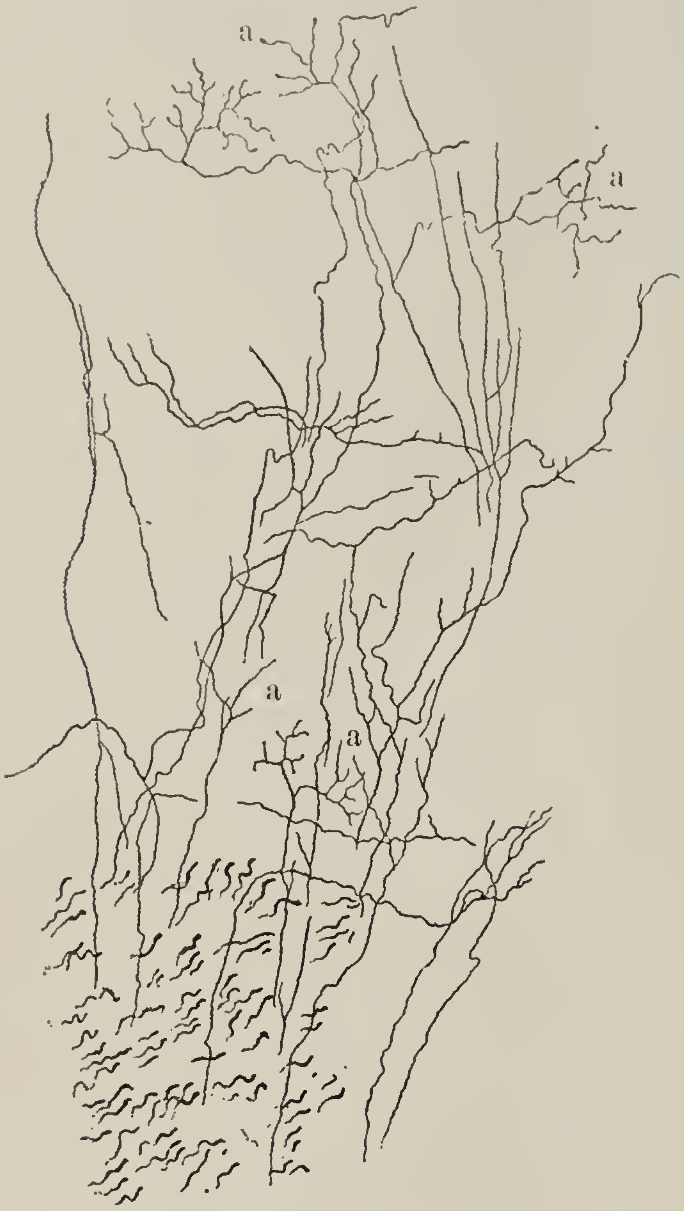

Fig. 42.—Endings, *a*, of collaterals from the dorsal funiculi in the gray matter of the spinal cord of the newborn rabbit. (After Kölliker.)

Golgi distinguishes the side fibrils (Fig. 43) which run off from the axone into the gray matter immediately after its origin from the regular collaterals which arise at a greater distance from the cell body. The former are non-medullated, the latter usually medullated. Though morphologically there seems to be no very obvious reason for such a division, von Lenhossék has recently expressed himself as of the opinion that the two structures may be of different significance in their functional aspects, a subject to which it will also be necessary to return.

In sum, then, the cell body, dendrites, axones with their collaterals and telodendrions represent the different portions of the neurones as discovered by the Golgi method. It is obvious that the closer the analysis, the more certain and distinct becomes the view of the morphological independence of the nerve units. Even of the existence of a soldering intersubstance we have very little evidence of a convincing nature. His * assumes the presence of an unformed ground substance between the different processes, and suggests that this may be a constituent easily affected by influences of a general nature, especially those of nutrition. On the other hand, von Lenhossék † argues that no one has seen this intermediate cement substance, and believes that it is possible to get along with the view which looks upon the plasma stream or lymph stream as the only substance saturating the final plexus of nerve processes and filling up the minimal interspaces of the tissue. Our knowledge of the lymphatics of the central nervous system is, however, deplorably deficient, and there is urgent need for further research in this direction. Ramón y Cajal's hypothesis, according to which the penetration of neuroglia fibrils between the processes of neighboring neurones plays a part in the make and break of conduction paths, will be referred to further on.

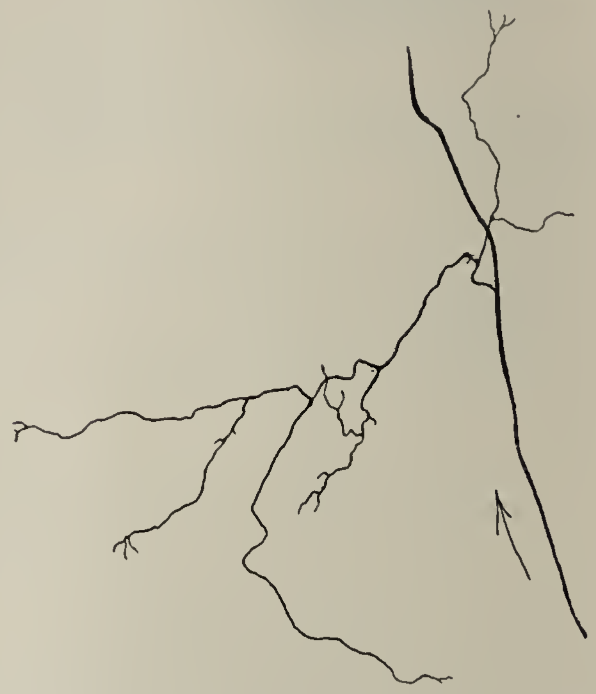

Fig. 43.—Side fibril of Golgi on the axone of a motor cell of the ventral horn of the spinal cord. The arrow indicates the cellulifugal direction. (After von Lenhossék.)

(To be continued.)

DIPHTHERIA IN AN INFANT NINE DAYS OLD.

REPORT OF FOUR CASES OF DIPHTHERIA IN THE SAME FAMILY: ONE CASE A YOUNG MOTHER IN CONFINEMENT AND ANOTHER THE BABE.

By D. G. SANOR, M. D.,
MALVERN, OHIO.

The following clinical report is made expressly to present the case of the infant. Was the child born with the infection already present, or was the child infected after birth? I should be glad to hear from any readers of the *Journal* who have seen similar cases. If infection took place at or before the second day, was this not an exceptional case?

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* His, W. Ueber den Aufbau unseres Nervensystems. *Berliner klin. Woch.*, 1893, Nos. 40, 41, S. 957, 996.

† *Op. cit.*, S. 52.

On the evening of November 7, 1896, I was called to see a sailor's wife suffering with some form of laryngitis, and presenting a history of hoarseness that had continued for four or five days. Deglutition was painful, and there was light dyspnœa. The temperature was 101° and the pulse 90. There was slight cough and considerable anorexia. As she was subject to such attacks, the family had paid little attention to the matter prior to the above day. There was no history obtainable at the time of exposure to diphtheria, but such was subsequently found. The family was then living in an isolated country place. The young woman was pregnant and about at full term. She was a primipara.

When I was called early the following day she was in labor, and by night was delivered. The labor was normal, but all the while her condition was becoming graver. The swelling of the tonsils was so severe that the pharynx could not be closely examined. Laryngeal cough and dyspnœa increased, and cyanosis became very marked. I informed the family that the case was one of malignant diphtheria. The patient grew rapidly worse. She was placed upon old-line treatment, but without apparent effects. Dr. D. L. Everhart was called as counsel and confirmed my diagnosis and prognosis. At this time the temperature was 105°, the pulse 140, and respiration 40. The same night coma set in and death followed.

On the 14th of the same month I was called to see the husband, also suffering from diphtheria. The membrane was confined to the pharynx and was quite extensive. I subsequently learned that he had suffered from soreness of throat four days before he made the matter known. He was placed upon old-line treatment, iron, mercury, whisky, and hot bichloride-of-mercury gargles being employed. After two weeks of active treatment he was convalescent, but a slight paralysis of the organs of deglutition followed and continued a few months. This was followed by profound anæmia, which still persists.

While I was attending the husband both the infant and the grandmother were found to have diphtheria. This was upon the 15th of the month, or when the child was only a week old. The treatment on the first day was with whisky and iron. The exudate filled the nose and throat, and the babe refused to take nourishment. On the 16th I found all the symptoms severer and decided to use antitoxine. Accordingly I administered five hundred units of Mulford's potent antitoxine. This was given at 10 A. M. At 2 P. M. the babe began to nurse. At 6 P. M. the dose was repeated. The case had then greatly improved. The following day the membranes were all found detaching excepting those of the uvula. I gave another doseof two hundred and fifty units, and at night found the child apparently well. With the exception of slight paralysis of the muscles of deglutition, which appeared in the third week, recovery was speedy and uneventful. The antitoxine produced prompt results, and not even a rash followed.

The grandmother had severe pharyngeal diphtheria. In the height of her suffering she was unable to swallow even liquids. She was treated with one thousand units of extra-potent antitoxine and required only one dose. She made a complete recovery.

AN ARITHMETIC AND GEOGRAPHY LESSON ON BLINDNESS IN NEW YORK STATE.*

By LUCIEN HOWE, M. D.,
BUFFALO.

The facts given in this paper explain its rather unusual title. These will show, I think, that it is possible to lessen the number of blind by at least ten per cent., and thereby reduce the cost to this State by over fifty thousand dollars annually. This could be brought about by practically wiping out a disease which is now almost a scourge to the race. That can be done; it should be done; and it depends somewhat on this society to determine how soon the first step will be taken to accomplish that much-to-be-desired result.

The disease referred to is the so-called purulent ophthalmia of infancy, or ophthalmia neonatorum.

It is now well known, of course, that this is caused by a germ which, entering the eye of the child at birth, remains a few days unnoticed, then, as it develops, sets up an inflammation, slight at first, but rapidly increasing, accompanied by swelling and profuse purulent discharge. Unless checked at this stage, ulceration of the cornea follows, with perforation and more or less loss of vision.

This disease has caused about twenty-one per cent. of all the blind now in the two State schools for the blind—namely, at Batavia, and on Thirty-fourth Street and Ninth Avenue in New York city.

The chart exhibited shows the causes of blindness among three hundred and six inmates of these two schools, as shown by an examination just completed by Dr. George H. Cocks for New York, and by the writer for Batavia.

Similar investigations in other countries by different observers show that to this cause can be attributed invariably from about eighteen to twenty-four or twenty-five per cent. of the blindness among the young at asylums.

Even when a large number of the blind of all ages are examined, we still find that ophthalmia of infancy is more destructive to vision than any other disease, causing between ten and eleven per cent. of the entire number. Various investigations have established this; among them should be mentioned the study by Magnus on causes of blindness among 2,528 persons of all ages. His results are shown by diagram. Now, the United States census for 1890 showed that we had 4,389 blind persons in this State, counting young and old together; and taking the minimum—estimating only ten per cent. —this gives us about 438 victims of this disease. That might be called the mortality to vision—the number made totally blind in both eyes; while the wounded—viz., those blind in one eye or disfigured, are left out of account. In this connection it is proper to extend our arithmetic one step further and observe what this one disease costs this State every year.

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* Read before the Medical Society of the State of New York at its ninety-first annual meeting.

The two schools for the blind, in Batavia and New York, cost the State last year $82,737.40; twenty-one per cent. of this, or, let us say, one fifth—viz., $16,547.38—was the actual cost of this one disease at those two schools alone.

Or let us approximate the figures in another manner. We probably have, as just stated, at least four hundred and thirty-eight blind from this cause. Now, supposing that each one could be supported as economically, proportionately, as are the paupers in large institutions—for example, at a hundred and twenty-five dollars a year—the actual cost of this disease must be $54,750 annually, and if we count the loss of the labor of these people to the State, the total is more than twice the amount.

Now I have ventured to repeat these tiresome details because of the important lesson they teach. And the lesson is this: That inasmuch as we have now learned that, by certain precautions, nearly all this cost to the State and the misery of this blindness could have been avoided, it behooves us as practitioners invariably to make use of those precautions. And still more, those who will not should be obliged to do so, at least under certain conditions; for, to state the matter baldly, as it must be, when so briefly, it can be said that with practically every child who is made blind by ophthalmia neonatorum, this blindness is directly and distinctly due first, and in the vast majority of cases, to the negligence of the obstetricians in omitting the plan recommended by Credé; second, to the negligence of the attendants in obtaining proper relief immediately; and third, to the inability of the oculist in a certain very small percentage of cases to prevent destruction of the eyes.

As to the first point, it is evident that by far the most effectual method of preventing this disease is to kill the germ which may have lodged beneath the lid before that organism has a chance to develop. Futile attempts had been made to accomplish this by different methods, and an almost infinite variety of antiseptics had been used in various strengths. Yet the results were not specially satisfactory until Credé called attention to the value of a two-per-cent. solution of nitrate of silver dropped into the eyes of children immediately after birth.

The data were so conclusive, and the results so remarkable, as practically to make a new era in the prevention of this much-dreaded disease. The accumulated experience now covers many thousands of cases. Various comparative tables have been compiled to show the advantages of Credé's plan. One of these, arranged by Fuchs, I present. These data could be extended and increased many times, if necessary, taking them from the private or hospital practice of other observers. The results, however, are sufficiently constant to have this table an exponent of all:

AUTHOR.	WITHOUT PRECAUTIONS.		TWO-PER-CENT. SILVER NITRATE.	
	Total No. of births.	Per cent.	Total No. of births.	Per cent.
Ohlshausen	550	12·5	.....	....
Credé	2,897	10·8	1,160	0·1
Königstein	1,092	4·8	1,250	0·7
Krukenberg	1,266	7·3	703	0·14
Felsenreich	1,887	4·3	1st period 3,000 2d " 2,100	1·9 1·0
Bayer	1,106	12·3	361	....
Total	8,798	....	8,574	....
Average per cent.	.....	8·66	.....	0·656

This shows that while, without treatment, we find that ophthalmia of infancy develops in over eight per cent. of all the children born in institutions, on the other hand, with this treatment, it occurs in only a little over one half of one per cent. In other words, the number of cases is about sixteen times as great without this precaution as when it is used. On such a basis of calculation for the cases of blindness in this State from ophthalmia of infancy we would have about twenty-seven instead of the four hundred and thirty-eight now probably existing. Of course this is not an exact calculation, but only an estimate based on the data before mentioned. The number would be greater or less than this if other sets of statistics from other observers had been selected. But about four hundred and eleven fewer persons would have been blind here in New York State alone had they received the benefit of the Credé preventive treatment. Will obstetricians permit that proportionate amount of misery to be charged to their account now that there is a means to prevent it? It is beyond the scope of this paper to discuss the reasons for and against Credé's method for the prevention of that disease. But, since the State pays such large sums each year to support the victims of this disease, and since it has surely as much right as an individual to demand the best treatment for those whom it supports, if not for all citizens, then why should it not have a law which makes the Credé plan obligatory, at least in public institutions? That, of course, would affect obstetricians more than any other class. To a certain extent it would increase their responsibilities, and might annoy them otherwise.

But setting aside their evident duty, as indicated by these data, in order to ascertain the opinion of a considerable number, I recently sent a letter to many prominent obstetricians in this State, asking each one—

1. If Credé's method should be used invariably in hospital practice.
2. If it should be made obligatory there.
3. If it should be used invariably in private practice.
4. If it should be made obligatory there also.

The replies would furnish sufficient material for a separate communication later. It is sufficient for our present purpose, however, to state that when these replies were tabulated it was found that the first question was answered in the affirmative almost without exception.

As for the second, the opinion was about equally divided.

About the third and fourth, however, the testimony was strongly in the negative. Only two offered the least objection to the method, and these objections were of a nature easily answered by abundant testimony.

In a word, at least half of those most likely to oppose such a law already believed in it for public institutions if not for private practice.

But supposing that such a law existed, the figures show that the disease would still develop in about one half of one per cent. of all children born. And what is to be done with these?

That brings us to the second point or second method of preventing the resulting blindness, or to the duties of nurses before mentioned, and the answer to this question is to enforce the law which already exists in this State relative to nurses and attendants. Every one knows how important the element of time is in the treatment of this disease.

Five years ago that subject was thoroughly discussed in this society, and largely as the result of that discussion a law was enacted which read as follows:

AN ACT FOR THE PREVENTION OF BLINDNESS.

SECTION 1.—Should any midwife or nurse having charge of an infant in this State, notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse so having charge of such infant, to report the fact in writing, within six hours, to the health officer or some legally qualified practitioner of medicine, of the city, town, or district, in which the parents of the infant reside.

SEC. 2.—Any failure to comply with the provisions of this act, shall be punishable by a fine not to exceed one hundred dollars or imprisonment not to exceed six months, or both.

SEC. 3.—This act shall take effect on the 1st of September, 1890.

Although this law was modified the following year, its provisions are virtually the same to-day, as found in Chapter 325 of the laws of New York for 1892, and it has been deemed so beneficial that, with slight changes in the first wording, it exists now in Maine, Rhode Island, Connecticut, Minnesota, Ohio, New Jersey, Maryland, Iowa, Missouri, Pennsylvania, Illinois, and Michigan, covering a population of about thirty-four million. That came from action beginning in this society. The real fact is, however, that this law is still partly inoperative, because physicians do not like to report negligent nurses as often as they should, and because judges are apt to be too lenient to these women, as frequently neither judge nor nurse appreciate the importance of the question. But the few convictions obtained, and arrests made, have undoubtedly exerted a wholesome effect in bringing nurses to a sense of their responsibilities and duties.

Now there are many who believe that children in public institutions or, in general, in the cities, should be subjected to the inconvenience of Credé's method, and also that the law concerning nurses should be strictly enforced there, but honestly believe also that any such precautions are unnecessary in private practice, especially in country practice. But when we look at the distribution of the blind in the counties of New York we find, to our surprise, that there are more thus afflicted in the country than in the cities, and it is but natural to infer that ophthalmia neonatorum furnishes at least its usual large quota of victims here as elsewhere.

Thus the United States Census for 1890 showed, as before stated, that we had 4,389 blind persons in this State—namely, 73.2 for every 100,000 persons. When we look at the distribution of those persons according to counties a curious fact attracts attention. We notice that there are in the county of St. Lawrence 122 to the 100,000; Franklin, 89 to the 100,000; Clinton, 144 to the 100,000; Essex, 122 to the 100,000. These give an average of 119 to the 100,000. On the other hand, we find in the county of New York 50 to the 100,000; Kings, 32 to the 100,000; Richmond, 54 to the 100,000; Westchester, 56 to the 100,000. Average, 48 to the 100,000. We notice that there are also in Erie 53 to the 100,000; Monroe, 57 to the 100,000; Rensselaer, 83 to the 100,000; Albany, 87 to the 100,000—or the average of these four counties in the northern corner of the State is 119, as contrasted with an average of 48 in and about New York.

While statistics are often deceptive, and there are marked exceptions to the rule, this peculiar distribution of the blind is too regular to be a coincidence, and we notice that, in general, the proportion of blind is less near the centres of population than in the counties where the area is large and the population scanty.

As a rule, easy transportation and good roads are in direct proportion to a low rate of blindness, while bad roads mean a higher ratio.

It is unnatural to suppose that this disease or any other is more common in the country than among an urban population. It probably is not. But it is true that more precautions are taken in the cities than in the country against this principal cause of blindness, and that this and other diseases of the eyes are, in general, more promptly and regularly treated. This is not the fault of one class of practitioners as much as it is the result of the environment of others, for in the vicinity of large cities it is possible for nurses or friends to take a child at once to a physician without much inconvenience or exposure, and where the facilities for travel are great the mother herself can very soon attend to this. This undoubtedly lessens the proportion of blind in and near the cities. On the other hand, where the distances are great and the roads are poor the patients are usually seen late, and often only at intervals. That is why bad roads mean a high percentage of blindness.

Finally, as to the third cause of blindness, supposing

Credé's method were made obligatory in every case, leaving only half of one per cent. of the children to contract this disease, and supposing nurses were invariably prompt in taking this small number of cases promptly to the physician, the question arises of how many of these children would still become blind from the ignorance of the practitioner or from the general lack of knowledge concerning the proper methods of treatment. This point has been carefully investigated by Cohn and others, and the results obtained from many different sources, especially from the statistics of large ophthalmic hospitals, show that on the average only about five per cent. of these children become blind when suitable treatment is instituted at an early stage. These figures need no comment. To recapitulate briefly, it may be said that if Credé's method were invariably used the number of blind from this disease would be only about twenty-seven instead of about four hundred and thirty-eight in this entire State. And, further, if these twenty-seven had been treated early by present methods, only five per cent. of them would have lost both eyes. That is, with Credé's plan invariably followed, and with treatment invariably prompt, we should have only one, or, at most, two cases of such blindness in each generation. We should soon practically end this terrible disease, and save the State each year over fifty thousand dollars.

The truth has been well stated recently by Professor Cohn, of Breslau, in a careful and exhaustive study of fresh data relating to blindness from this cause. He concludes thus with a quotation from Professor Dimmer: "Ophthalmia of infancy can and must be wiped out of every civilized country."

That is the lesson which this arithmetic and geography has to teach us. Shall it be forgotten, and shall one generation of blind after another result from our neglect? Or shall the Empire State take the lead in wholesome legislation again as it has before? The answer to that question depends largely on the medical profession of the State, and the consequent honor or dishonor will be theirs.

DR. PAUL PAQUIN'S ANTITUBERCLE SERUM IN TUBERCULOSIS.*

By WILLIAM HUTSON PRIOLEAU, A. M., M. D.,
SUMMERVILLE, S. C.

SEROTHERAPY is yet in its infancy, and any light which can be shed on this topic will be of value to all of us. In an experience with Dr. Paquin's antitubercle serum extending over a period of sixteen months I can safely say that nothing has ever given me such good results as this serum. I do not state that it is a specific for tuberculosis, but I do say that there are few cases of unmixed tuberculosis that can not be benefited by it. This applies not only to tuberculosis of the lungs, but also to tuberculosis of the larynx and joints. I presume that all of you gentlemen have heard of this serum, and probably some of you may have tried it. Manufactured in St. Louis, as you are aware, under the supervision of the State Board of Health of Missouri, and under the personal direction of Dr. Paquin, it is quite evident that it must be unattainted of any fraud. Dr. Paquin was himself a student of that renowned benefactor of mankind, the late Louis Pasteur, a fact which in itself must necessarily lend great weight to any theory or treatment that he approves. The antitubercle serum is obtained from the horse, and is made on the theory that a toxine produces an antitoxine when introduced into the blood of an animal. It is the old immunity theory. The relation that diphtheria antitoxine bears to diphtheria is the same that the antitubercle serum bears to tuberculosis. These two serums depend upon the same principle, and both have rendered remarkable and unexpected results. I feel quite sure that after having learned the results of my experience many of you will return home with a new drug in your pharmacopœia, and that in the near future you will all find its use absolutely necessary in order to give the poor consumptive the long-desired relief which he has so frequently sought for in vain. In using this serum I have only twice noticed any dangerous symptoms, both times in the same patient. He had been taking the injections daily for two months, when suddenly, one afternoon, just after the serum had been injected, he became flushed and gasped for breath. His pulse grew very weak. I did not do anything at that time because his condition was not sufficiently alarming, and for the further reason that I wished to observe what would be the probable result. In the course of a brief time he came to again. This same condition existed at the time of the next injection. What was the cause of these alarming symptoms I am unable to state; but it is a fact worthy of observation that in no case has death occurred from an injection of this serum. In all, I have treated thirteen patients with this serum. Very often, under its influence, I have seen many of the worst symptoms disappear. As if by magic, fever, night sweats, loss of appetite, hæmorrhage, etc., all yield to it. Many of the most desperate cases have received temporary relief, while the incipient cases have received permanent benefit. Some patients can not take the injections hypodermically because of the tissues in the back becoming swollen and painful; for these patients I order rectal injections of double the hypodermic dose. I shall not prolong this discussion by relating in detail each and every case that came under my treatment, but shall take up four only, leaving the remainder unmentioned except in so far as they possess points of especial importance connected with the subject.

CASE I.—An Englishman, aged thirty-one years. Family history negative. Contracted phthisis pulmonalis in the spring of 1895. In the summer of the same year he caught a cold which settled on his larynx. He came to me in December, 1896. On examination I found the upper lobe of the left lung breaking down. The larynx showed inflammation. He could not speak above a whisper and could hardly walk. He had lost flesh and was also suffering from indigestion. I advised the serum treatment. After three months' use of this serum my patient had gained so much strength that he was able to walk briskly; his voice also was considerably stronger. His appetite became greatly improved, and consequently he felt better than he had for some time. Unfortunately for the patient, he was unable to continue the serum treatment; but the effects lasted about six months, when the grip, attacking him, lowered his vitality to such an extent that the old trouble returned. It is my firm belief that had this patient been able to keep up the treatment he would have been restored to health again. In fact, he admitted this much to a friend; for once he remarked that if it ever became possible for him to stand the expense of the serum treatment he would undoubtedly begin its use again.

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* Read before the South Carolina Medical Association at Union, S. C., April 29, 1897.

Case II.—Charlestonian, aged twenty-eight years. Family history good. Contracted phthisis pulmonalis in February, 1895, after having been weakened by two successive attacks of the grip. Physical examination showed one spot on apex of right lung, and another in lower part of upper lobe of left lung posteriorly. It was a typical case, with fever, cough, night sweats, hæmorrhage, etc. The patient was ordered, in May, 1895, to the mountains of North Carolina, where he passed the summer with little or no benefit. He then came to Summerville in the autumn and remained for two months, when, tuberculosis of the hip and testes developing, he was advised to go to Charleston for the purpose of having an operation performed. There his testes were operated on, but he refused to have his hip joint opened. The pain in his hip had become so intense that the slightest movement in bed would cause extreme agony. At my earnest request the physician in charge kindly consented to treat him with Dr. Paquin's serum, and it was not very long before his hip became much improved. So great was this improvement that in a few months the patient was enabled to walk without the help of crutches and with absolutely no pain. In every respect he continued to improve, and finally, in March, 1896, he returned to Summerville. There I continued the serum treatment until the hot weather set in, at which time, for numerous reasons, I stopped it. Not three weeks after its discontinuance the patient developed tuberculosis of the brain, which in the short space of two weeks caused his death.

This case is interesting in many points. First, the development of tubercles in the lungs, followed by tubercles in the testes, hip, and brain; also because of the marked and immediate relief furnished him by Dr. Paquin's serum. And lastly, because it was the only case in which I have observed alarming symptoms caused by an injection of the serum.

Case III.—Virginian, woman, aged thirty-five years. Family history negative. Patient had suffered from repeated attacks of the grip. In the last four years it was her custom to come South for the winter season. An examination revealed a lesion in the upper part of the right lung. I could not say whether it was tubercular or not. A careful examination of the sputa did not show tubercle bacilli. There had been no improvement in health during the last three winters, so this year I placed her under the serum treatment. Immediately after using this serum improvement became quite noticeable, and after three months' treatment I allowed her to return home; not, however, without cautioning her to be extremely careful with herself, and for the next year to use twice a week rectal injections of Dr. Paquin's serum, forty minims at a dose.

Case IV.—Summervillian, man, aged twenty-five years. Family history poor. Father and sister had died of phthisis pulmonalis. Patient has had a cough all his life. In June, 1896, he had several hæmorrhages; also fever, night sweats, cough, etc. On examination, I found consolidation in upper part of lower lobe of left lung. I immediately put him under the serum treatment with no other medicines. Very soon his hæmorrhages ceased, his night sweats were arrested, and his fever left him. His appetite was restored and his strength renewed. Improvement continued until the summer, when the injections of serum were discontinued because of the great difficulty in keeping the serum fresh. In the fall I commenced to inject him again, and since that time he has steadily improved. His gain in weight is eleven pounds, and he coughs only when the atmosphere is damp and moist. I advised him that he could return to his work, but that for the next year he must use the serum by rectal injections twice a week.

This case is worthy of observation, because of such a brilliant and successful result in one who so strongly inherited a predisposition to tuberculosis.

So far I have discussed, in detail, the history and treatment in four cases, and now I propose merely to make brief mention of the remaining nine which have come under my notice, giving only the most important points connected with them.

Report of Cases.

No.	Sex.	Age.	Family history.	Disease.
1	M.	29	Good.	Phthisis pulmonalis.
2	F.	39	Not good.	Phthisis pulmonalis with cavities.
3	F.	17	Very poor.	Phthisis pulmonalis with pernicious anæmia.
4	M.	35	Unknown.	Phthisis pulmonalis with frequent hæmorrhages.
7	F.	40	Unknown.	Cavity in left lung.
5, 6, 8, and 9 already reported in detail.				
10	M.	29	Unknown.	Phthisis pulmonalis five years and laryngeal tuberculosis one year.
11	F.	38	Unknown.	Acute pulmonary tuberculosis.
12	F.	40	Good.	Laryngeal tuberculosis.
13	F.	23	Good.	Acute pulmonary tuberculosis.

1. The patient was in a dying condition when first seen. Daily injections of serum gave him relief and prolonged his life.

2. All distressing symptoms disappeared under the serum treatment. The patient was too far gone for anything to benefit her permanently.

3. Tuberculosis was checked, but death resulted from anæmia.

4. Hæmorrhages checked, and patient's condition improved. Ordered home when hot weather began. Result unknown.

7. I could see no improvement in this case, although the patient stated she was better. As she was unable to

stand our warm weather in the summer I sent her home in May. Result not known.

10. This case was that of a physician who took the serum treatment having no faith in it, but died convinced of its merits.

11. The patient when first seen had a large cavity in the left lung. The right lung was consolidated. I did not use the serum expecting a cure, but simply to give her strength enough to return home. She died three months after I first saw her.

12. Marked improvement. Left for her home with instructions to continue treatment.

13. Too far gone for serum to accomplish any good results. Used it for about a month, and then discontinued it, or rather told her father to take her home.

Two of my patients, you will observe, have been dismissed practically cured, an unusual result in tuberculosis. Of the remaining eleven, all but one were benefited. In using this serum I did not, as a rule, give up other medication—hygiene, diet, etc.—because diet and hygiene are of vast importance, and proper medication is also quite advantageous. There is no medical routine that I know of, but my method is to use, along with the serum, strychnine, arsenauro (Charles Roome Parmele Company), protonuclein (Reed & Carnrick), and Gude's peptomangan. Before concluding, I must add that many of these cases were exceedingly desperate, and while some may argue, perhaps rightly, that the climate of Summerville was largely instrumental in producing these good results, still I must maintain that the primary cause was Dr. Paquin's great discovery.

Therapeutical Notes.

Birch Leaves as a Diuretic.—Winternitz (*Centralblatt für die gesammte Therapie; Journal des praticiens*, June 5, 1897) reports that an infusion of the leaves of the birch (species not mentioned) is a powerful diuretic. He says the leaves should be gathered in the spring and well dried before they are used. From twenty-five to thirty parts of the leaves are added to from a hundred and fifty to two hundred parts of hot water, the water is then made to boil for an instant, and the leaves are allowed to macerate for an hour or two. The dose is not stated.

The Treatment of After-Pains.—Dr. J. L. Audebert of the obstetrical clinic of the Faculty of Medicine of Bordeaux (*Gazette hebdomadaire de médecine et de chirurgie*, June 3, 1897), recommends an enema of fifteen grains of antipyrine in four ounces of boiled water; also the following:

℞ Fluid extract of viburnum prunifolium,
Fluid extract of hydrastis canadensis, } each, ½ fl. ounce.
M. S.: Twenty drops every two hours, in a hot drink.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JUNE 26, 1897.

THE CONCOURS IN FRANCE.

Some of our brethren in France seem to have lost confidence in the concours system as a bar to intrigue and favoritism. In the *Journal de clinique et de thérapeutique infantiles* Dr. Variot lately gave his opinion concerning the nomination of three hospital physicians in Paris. He asserts that the tests are no longer anything more than lamentable shams intended to cover up an election prearranged among a majority of the judges. As regards the particular concours which resulted in the appointment of these three physicians, he declares that as soon as the jury had been constituted and before the examination was begun everybody knew who would be appointed. There were no fewer than seventy-five candidates, and thirty-five sittings of three hours each were held, and M. Variot, who was one of the judges, but one of the minority, asks if it can be conscientiously admitted that out of so large a number only three met all the requirements, while all the others, men of worth as they were, tumbled over each other in confusion (“*culbutaient indistinctement les uns sur les autres*”). He thinks it would have been better if the vote had been taken at once after the first meeting, for then the candidates' feelings would have been spared as well as a useless expenditure of the judges' time.

The *Gazette médicale de Nantes*, which cites M. Variot's criticism, recognizes that the state of things revealed is deplorable and calculated to discourage workers. Nevertheless, it still believes that for France the concours will long remain the best guarantee against intrigue. It has its weak points that can not be overlooked, the *Gazette* is unable to deny, but it sees many others in any plan that might be substituted for it. What is called a *concours sur titres* has been demanded by some of the journals. This seems to be a competition based on what the candidates can show that they have accomplished, especially by their contributions to literature. As regards a concours of this sort, the *Gazette* cites the case of Déjérine, who, it suggests, was made an *agrégé* in spite of his works, rather than on account of them, for as titles Charcot regarded them as titles to nothing better than ostracism. Our contemporary goes on to say that Charcot, although a competent judge, unfortunately allowed himself to be led by his intimates and by an inclination to nepotism, as is generally done in France, particularly in Paris. Charcot, powerful as he was, adds the *Gazette,* was forced in Déjérine's case by the threat of great scandals, such as the noisy withdrawal of certain members of the jury who, fortunately, supported the candidate.

Our Nantes contemporary gives other reasons for still relying on the concours. The French people, it says, are so constituted that they would not work if they were not stimulated by the prospect of tests to be submitted to publicly. Peoples, it remarks, have their temperaments as well as individuals, and the French are neither Germans, nor Russians, nor Englishmen. It concedes that a candidate's original works should go far in his favor, but that, it insists, is no reason for tampering with the concours. To the objection that the superannuated system now in force favors the good talkers at the expense of the others it answers that that is doubtless a danger to be avoided, but it must not be forgotten that, when a professor is to be chosen, a mute will not answer, no matter how scientific he may be. As to this point, the *Gazette* quotes from the *Progrès médical,* which said, apropos of Maisonneuve's death: "If he did not succeed in the concours, it was undoubtedly because he was a very poor speaker and because, in our country, to be a surgeon one must know how to talk!" To this the *Gazette* retorts that to practise surgery and to teach it are two different things; to teach it to students, and do it well, one must certainly be able to expound and explain it in words.

MINOR PARAGRAPHS.

ICHTHYOSIS IN THE ISLAND OF MELEDA.

At a recent meeting of the Imperial-royal Society of Physicians of Vienna (*Wiener medizinische Blätter,* June 10, 1897) Dr. Neumann mentioned a rare skin disease observed among the inhabitants of the island of Meleda. The soles of the feet were beset with callosities more than half an inch thick, separated by furrows, so that the surface had a honeycomb appearance. There were also callosities on the dorsum of the foot, each surrounded by a red, hyperæmic area. Similar appearances were found on the palms of the hands, on the wrists, and on the extensor surfaces of the knees and elbows. For years the disease had been hereditary in a family. The speaker defined it as a hyperkeratosis which had first been described in 1826 as a partial ichthyosis.

ITEMS.

The Twelfth International Medical Congress.—Dr. A. Jacobi, chairman of the American national committee, which was established at the request and under the authority of the general committee of the congress, desires to inform the numerous gentlemen who are constantly applying for information concerning certificates, trip, fares, hotels etc., that he has none to give, not having heard from the general committee for two months.

Yale University.—The annual address in medicine will be given by Dr. William M. Polk, of New York, in College Street Hall, on Tuesday, June 29th, at noon, on the subject of How to Work.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 22, 1897:

DISEASES.	Week ending June 15.		Week ending June 22.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	0	9	4
Scarlet fever	158	6	179	14
Cerebro-spinal meningitis	1	1	4	0
Measles	192	11	228	8
Diphtheria	255	40	261	41
Croup	10	5	11	4
Tuberculosis	150	94	140	113

Marine-Hospital Service Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general:

Small-pox—United States.

Toledo, Ohio	May 1–31	11 cases,	2 deaths.
St. Louis, Mo.	May 1–31	3 "	3 "
New York, N. Y	June 5–12		4 "

Small-pox—Foreign.

Calcutta, India	May 1–8		15 deaths.
Matanzas, Cuba	June 2–9		1 death.
Trieste, Austria	May 22–29		1 "
Alexandria, Egypt	May 6–13		1 "
Cairo, Egypt	May 6–13		2 deaths.
Rotterdam, Holland	May 29–June 5	1 case.	
Madrid, Spain	May 26–June 2		2 "
St. Petersburg, Russia	May 22–29	8 cases,	4 "
Rotterdam, Holland	May 29–June 5	1 case.	
Habana, Cuba	June 3–10	8 cases,	1 death.
Cardenas, Cuba	May 29–June 5	3 "	1 "
Sagua la Grande, Cuba	May 29–June 5	17 "	3 deaths.
Habana, Cuba	June 5–12		1 death.
Cardenas, Cuba	May 29–June 5		1 "

Cholera.

Calcutta, India	May 1–8		70 deaths.
Bombay, India	May 11–18		1 death.

Yellow Fever.

Bahia, Brazil	May 12–19		3 deaths.
Matanzas, Cuba	June 2–9		3 "
Rio de Janeiro, Brazil	May 8–15		3 "
Habana, Cuba	June 3–10	170 cases,	37 "
Cardenas, Cuba	May 29–June 5	2 cases.	
Sagua la Grande, Cuba	May 29–June 5	24 "	
Santiago de Cuba	May 22–June 5		6 "
Habana, Cuba	June 5–12		37 "
Panama, Col	May 24–June 3	20 "	14 "

Plague.

Bombay, India	May 11–18		67 deaths.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Commissioned Officers of the United States Marine-Hospital Service for the Five Weeks ending June 19, 1897:*

MURRAY, R. D., Surgeon. Granted leave of absence for four days from June 1, 1897.

PETTUS, W. J., Passed Assistant Surgeon. Granted leave of absence for twenty-three days from May 18, 1897.

STEWART, W. J. S., Passed Assistant Surgeon. Granted leave of absence for three days from May 26, 1897.

GREENE, JOSEPH B., Assistant Surgeon. To rejoin station, Detroit, Mich., on return to Evansville, Ind., of Passed Assistant Surgeon P. M. CARRINGTON. June 9, 1897.

GRUBBS, S. B., Assistant Surgeon. To proceed to Boston, Mass. and report to medical officer in command of service for duty on return to Detroit, Mich., of Assistant Surgeon Joseph B. Greene. June 9, 1897.

Hastings, Hill, Assistant Surgeon. Granted leave of absence for seven days from June 7, 1897. Leave of absence extended for seven days from June 14. 1897.

Banks, C. E., Surgeon. To inspect service at Memphis, Tenn., St. Louis, Mo., Cairo, Ill., Evansville, Ind., Louisville, Ky., and Pittsburgh, Pa., June 5, 1897.

Peckham, C. T., Passed Assistant Surgeon, and Kalloch, P. C., Passed Assistant Surgeon. To report June 22, 1897, at bureau for examination for promotion. June 15, 1897.

Glennan, A. H., Passed Assistant Surgeon. To inspect Cape Charles Quarantine and vessels connected therewith. June 14, 1897.

Wasdin, Eugene, Passed Assistant Surgeon. To proceed to Detroit, Mich., for temporary duty. June 15, 1897.

Cobb, J. O., Passed Assistant Surgeon. To proceed to St. Louis, Mo., and assume temporary command of service. June 19, 1897.

Stoner, J. B., Passed Assistant Surgeon. Granted leave of absence for seven days from June 17, 1897.

Brown, B. W., Passed Assistant Surgeon. Granted leave of absence for twenty days from June 28, 1897.

Boards Convened.

Board convened to meet in Washington, D. C., for physical examination of Assistant Surgeon Emil Prochazka: Surgeon C. E. Banks (chairman); Passed Assistant Surgeon G. T. Vaughan; E. K. Sprague (recorder).

Board convened to meet in Washington, D. C., June 22, 1897, at 10 o'clock, a. m., for examination of officers of the service for promotion: Surgeon P. H. Bailhache (chairman); Surgeon G. W. Stoner and Surgeon C. E. Banks (recorder).

Death.

Surgeon W. H. H. Hutton died at Detroit, Mich., June 14 1897.

Society Meetings for the Coming Week:

Monday, *June 28th:* Medical Society of the County of New York; Cambridge, Massachusetts, Society for Medical Improvement; Baltimore Medical Association.

Wednesday, *June 30th:* Auburn, N. Y., City Medical Association; Berkshire, Massachusetts, District Medical Society (Pittsfield).

Thursday, *July 1st:* Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Washington, Vermont, County Medical Society.

Friday, *July 2d:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Saturday, *July 3d:* Miller's River, Massachusetts, Medical Society.

Births, Marriages, and Deaths.

Married.

Bill—Seabury.—In New York, on Wednesday, June 16th, Dr. Edmund Wallen Bill and Miss Susan Saltonstall Seabury.

Brennan—Mott.—In New York, on Tuesday, June 15th, Mr. Isaac Bell Brennan and Miss Genevieve Moffet Mott, granddaughter of the late Dr. Valentine Mott.

Echols—Harrison.—In New York, on Tuesday, June 15th, Professor William H. Echols, of the University of Virginia, and Miss Elizabeth M. Harrison, daughter of Dr. George Tucker Harrison.

Maguire—Bosset.—In Detroit, on Wednesday, June 16th, Dr. Francis J. W. Maguire and Miss Mignon E. Bosset.

Monks—Gardner.—In Boston, on Tuesday, June 15th, Dr. George H. Monks and Miss Olga Gardner.

Oppenheim—Elsberg.—In New York, on Tuesday, June 15th, Dr. Nathan Oppenheim and Miss Bertha A. Elsberg.

Severn—Tunison.—In Townsendville, N. Y., on Wednesday, June 16th, Dr. Frank W. Severn, of Farmer, N. Y., and Miss Bertha Mae Tunison.

Turck—Paine.—In Dixon, Illinois, on Thursday, June 10th, Dr. Fenton Benedict Turck, of Chicago, and Miss Avis Paine, daughter of Dr. Henry E. Paine.

Died.

Nettles.—In Grangeville, Louisiana, on Saturday, June 12th, Dr. Silas S. Nettles, aged sixty-eight years.

Potter.—In Lancaster, N. Y., on Saturday, June 12th, Dr. Samuel Potter.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of May 27, 1897.

Dr. Simon Marx, Chairman.

Uterine Fibroma with Beginning Sarcomatous Change.—Dr. Mary Putnam Jacobi presented a fibroma removed by operation. Microscopical examination showed beginning sarcomatous degeneration. The patient had been conscious of its presence for about a year previously, but it had caused little inconvenience until last January, when she had had a profuse uterine hæmorrhage. This had been controlled at first by tamponing and curetting, and afterward by galvanism. Just before this there had been slight fever. The current had been applied within the uterus, and of a strength of fifty milliampères. Shortly after this there had been another severe hæmorrhage, which had led to the removal of the tumor by Dr. Polk. On section of the tumor after its removal, a large area of softening had been discovered in it. The mucosa of the uterine cavity was perfectly smooth and free from necrosis, showing that the intra-uterine use of galvanism had had nothing to do with the necrosis of the tumor.

Malignant Disease of the Cervix Uteri; Vaginal Hysterectomy with the Paquelin Cautery.—Dr. Hermann J. Boldt presented a uterus that he had removed by the vaginal route. It was the seat of a myoma, as well as of a carcinoma; yet he thought it had been removed radically and completely. Having separated the bladder from the anterior surface of the uterus as far up as possible, he had packed gauze in so as to keep the ureters out of the way of injury. After two or three days, it had been found that there was a leakage of urine. He felt satisfied that there had been no injury of the bladder, and that the left ureter had been injured by the heat of the cautery. The specimen showed how completely the carcinomatous uterus could be removed with the Paquelin cautery without resort to ligatures or clamps. The speaker was inclined to believe that this method offered special advantages in cases, not of malignant disease of the body, but of the cervix, and that the *ultimate* results would prove to be far better from it.

Dr. W. Gill Wylie said that he certainly would not resort to the use of the cautery in cases of malignant disease of the uterus until every other method had been exhausted. His objection was that one could never be sure just how far-reaching would be the effect of the cautery. This had been well exemplified in the case just reported by Dr. Boldt, in which the ureter had been injured without the operator knowing it at the time.

The great secret of success in the treatment of cancer was not to be found in the particular mode of operating, but in operating early and radically. The use of the cautery he considered a step backward. He would prefer a saturated solution of chloride of zinc to the use of the hot iron, if cauterization seemed to be indicated.

Dr. Boldt said that it had been shown that in many instances infection occurred during an operation, and this was one reason for using the cautery. The usual methods of operating for cancer of the cervix gave almost uniformly bad ultimate results, although undoubtedly the immediate results were fairly good. Chloride of zinc was a useful application in "inoperable" cases, but he doubted very much whether as much could be accomplished with it as with the hot iron.

Malignant Adenoma of the Uterus.—Dr. Henry C. Coe presented a uterus removed by operation from a woman, forty years of age, who had enjoyed good general health up to about eight months before. At this time she had begun to have metrorrhagia, and soon afterward an irregular bloody discharge. He had curetted her last January, and because of the soft, brainlike material that had been removed he had insisted upon the diagnosis of malignant disease. Microscopical examinations on two different occasions had resulted in the report that the growth was not malignant. Nevertheless, on removing the uterus he had found a malignant growth. Dr. Coe said that he had seen several of these cases, all presenting a similar clinical history, and had described them under the name of "malignant adenoma." He had found that the microscopical report was totally unreliable in these cases. The prognosis was especially favorable, and a prompt operation, in what might be called the "pre-cancerous stage," gave very good results. The occurrence of irregular hæmorrhage, without foul discharge, pain, or impairment of the general health, should arouse suspicion, and when, on curetting, soft, brainlike material was removed, the diagnosis was almost certain.

A Calcareous Fibroid.—Dr. W. Gill Wylie presented a uterus and tumor that had been removed from a woman, over sixty years of age, about a month before. The chief symptom had been uterine hæmorrhage. Examination of the tumor had revealed the presence of an unusually large mass of firm, calcareous matter. She had made a good recovery from the operation.

A Fibroid Undergoing Carcinomatous Degeneration.—Dr. Wylie also presented a tumor, removed from a woman, thirty-seven years of age, who had had scanty and irregular menstruation, but no pain. The usual rule was to let alone cases of fibromata if there were no symptoms produced by the tumor, but he felt that if the tumor was large—*e. g.*, of the size of a cocoanut—it was better to remove it on account of the danger of its undergoing malignant degeneration. The condition of this tumor showed the wisdom of this course, as it had already undergone extensive carcinomatous change.

A Staff for Packing Gauze into Cavities.—Dr. Philander A. Harris, of Paterson, N. J., exhibited a curved metallic staff bearing some resemblance to a urethral sound, but terminating at its distal end in a V-shaped extremity. This toothed extremity served to catch the gauze and carry it easily into the cavity. It had proved very useful in his hands, and had been termed by his assistants a "packing staff."

Dr. Boldt said that his experience with cases of malignant adenoma was that, although at first they might not give the picture of malignant disease under the microscope, they invariably did so subsequently, and the patients always died in about eighteen months after the occurrence of the hæmorrhages, unless operated upon early. Personally, he would always rely more upon the clinical than the microscopical diagnosis in cases in which the bleeding recurred after a curetting.

Dr. A. E. Gallant spoke of three cases in which hæmorrhage had recurred after curetting. In these cases the hæmorrhage had been best controlled by the administration of iodide of potassium. Each of these patients had given a more or less distinct history of syphilis. A microscopist had diagnosticated one of the cases as malignant, and the uterus had been removed on the strength of this, but no malignant disease had been found in it.

Dr. Coe said that malignant disease of the uterus gave rise to one especially suspicious symptom—irregular metrorrhagia—not menorrhagia.

Symphysiotomy.—Dr. Edward A. Ayers read a paper on this subject. He said that as the mortality to the mother was about one per cent. greater in selected symphysiotomy cases than in those of induced premature labor, and for the child, about twice as great, the decision as to which operation should be done might well be left to the parents. Last year he had reported five cases of symphysiotomy, in four of which there had been no disability whatever following the operation. In the other case, the division of a cicatricial ring in the vagina had been followed by sloughing, communication with the rectum, and infection of the operation wound. As a result of this, the patient had died from septic pneumonia. He then reported three additional cases.

Dr. Ayers said that it was his custom to leave a strip of gauze in the wound for drainage, and to retain a soft-rubber catheter in the bladder for several days. Four advantages were alleged for this method of operating—viz.: 1. The hæmorrhage was readily controlled with the thumb. 2. The integrity of the integument over the joint allowed of greater stretching over the pubes without laceration. 3. There was no exposure of the wound to the air after the patient had been placed in bed, for the labia closed the wound completely. 4. Drainage was perfect, as the wound was at the base of the symphysis. If the pelvis was left to itself after the operation, it tended to widen to the extent of about an inch. In two cases he had used a device for conveniently holding the pelvis and patient firmly, to which he had given the name of "the symphysiotomy hammock."

Dr. Ayers closed his paper with a report of the recorded cases of traumatic separation of the pubes occurring spontaneously, during labor, or in connection with violent efforts at extraction of the child.

Dr. W. Gill Wylie believed that to-day there should be very little risk from the induction of premature labor; hence the comparison of symphysiotomy with the old statistics of induced labor was hardly fair. The induction of premature labor was a very simple matter; the risk was very slight to the mother and much less to the child than formerly. For these reasons it seemed to him that the selection between symphysiotomy and the induction of premature labor should not be left to the parents. He had met with two cases in which there had been traumatic separation of the symphysis. He had found the symphysiotomy hammock exceedingly useful in the treatment of these patients.

Dr. A. B. Tucker said that he had had two cases of symphysiotomy, both in tenement houses. One patient was an exceedingly fleshy woman, in whom the head had not engaged after she had been in labor for twenty-four hours. He had done subcutaneous symphysiotomy on her, and she had been able to do all her hard housework since then. The second patient had been in labor from Sunday to Thursday before he had seen her, and the uterus was firmly contracted from the effects of ergot. A good result had been obtained in this case also.

Dr. J. Alexander Brown, of Paterson, N. J., said that he had had an opportunity of examining the pubic joint in one case two years after the operation, and had been able to satisfy himself that in this instance at least true bony union had taken place. In this case there had been no free hæmorrhage from the venous plexus behind the symphysis at the first symphysiotomy, but at the second one the hæmorrhage had been profuse. This he explained by supposing that the plexus had been caught in the firm, unyielding cicatricial tissue. The speaker said that, so far as he knew, all operators had secured fairly good fibrous union, no matter what method of dressing or after-treatment they had employed.

Dr. Coe said that he had not been impressed very favorably with symphysiotomy as an operation suitable for private practice. As the object of symphysiotomy was to secure a living child, he would prefer to take the chances with a Cæsarean section. He had lost with symphysiotomy one child out of three. It was to be inferred that symphysiotomy was practically without mortality, and that, as a rule, no great disability would follow, but we could not hold out a very good prospect of a living child, especially if the child was a large one.

Dr. C. A. von Ramdohr said that symphysiotomy was an excellent operation if performed by an expert, but with an operator of less experience elective Cæsarean section would probably be safer.

Dr. P. A. Harris said that symphysiotomy was certainly an operation for experts only. The os should be fully dilated before it was done. He believed that many children were born through an osseous birth canal whose internal conjugate was three inches or less. The "hammock" seemed to be an admirable device.

Dr. Robert A. Murray said that it was essential that the cervix should be fully dilated, and it was not necessary to wait long for this, as it could be readily accomplished artificially. Having done this, it seemed to him eminently proper that the obstetrician should introduce his hand into the uterus and explore the pelvis carefully, and so determine the degree of disproportion existing between the maternal and fœtal parts and the method best suited for delivery.

Dr. Ayers said that it was only in a very small percentage of cases that one had an opportunity to *elect* premature labor. The latest statistics seemed to show an infantile mortality from induced premature labor nearly double that of symphysiotomy, and a mortality for the mother slightly in favor of symphysiotomy. While with the various methods of after-treatment fair union of the symphysis could be secured, it could be obtained with the least discomfort by the use of his hammock. As regarded the choice of the Cæsarean section, he said that as the maternal mortality was far better with symphysiotomy than with the Cæsarean section, he could not understand Dr. Coe's preference.

Results from the Administration of Iron in a readily Assimilated Form after Gynæcological Operations.—Dr. C. A. Von Ramdohr read a paper with this title. (See page 858.)

Dr. W. Gill Wylie said that he had recently been studying the effect of preparing the patients for operation by giving them meat juice and other concentrated and partially digested foods, with a view to increasing the quantity and quality of the blood. He was confident that iron was also a useful remedy for such a purpose, and he had for many years past been accustomed to use it in combination with glycerin, as this seemed to act better than the iron alone.

Dr. William Henry Porter said that there could be no question about the utility of iron, both before and after an operation. It certainly had a very decided tendency to augment the quantity of hæmoglobin and to increase the number of the red blood-corpuscles. He had come to believe that it mattered little what preparation of iron we used, provided it was well tolerated by the stomach. He believed that they all acted in the same way—viz., they were acted upon by the acid of the gastric juice and converted into the chloride, and this chloride was decomposed by the sulphur compounds. He had been informed that there would soon be placed on the market a concentrated solution of nucleo-albumin which acted in the same way as the iron—*i. e.*, the nucleo-albumin was decomposed, with the formation of a chloride. It helped to satisfy the sulphur compounds which are decomposing the natural nucleo-albumin of the food.

Dr. Mary Putnam Jacobi agreed with the last speaker that all preparations of iron acted in the same way. The effect of manganese did not seem to have been exactly determined, and the action of pepto-mangan was rather remarkable. With regard to the use of glycerin preparations of iron, she had noticed that if patients were given remedies made up with glycerin, they would often suffer from a burning sensation in the stomach, which rendered it necessary sometimes to suspend the administration of the remedy. This was due to the osmotic action of the glycerin on the mucosa. It should teach us the importance of sufficiently diluting such a preparation at the time of its ingestion.

Dr. R. A. Murray said that, while it might be advantageous to give iron in some cases prior to an operation, he certainly would not consider it good practice to do so in cases of fibroma, for example, in which there was the liability to much hæmorrhage, for the iron would certainly increase this liability. Another point in the administration of iron was that it should always be given largely diluted, in small doses, and at short intervals.

Dr. H. L. Collyer said that he had used iron a great deal after operations. The particular preparation described in the paper appeared to have a special action as a blood-maker, apparently due to the manganese which it contained.

Dr. von Ramdohr said that one out of twelve cases had been a check case, the patient not being given any iron after the operation. The blood counts in the check patient had been about fifteen per cent. less than in the others.

Miscellany.

The Immorality of the Antivivisection Movement.—To the June number of the *Open Court* Dr. Paul Carus contributes an article in which he states his views of the subject as follows: It is not to be doubted, he says, that the antivivisectionists are noble men and women possessed of the noblest of all virtues, compassion for the suffering; but they lack the most essential of all virtues—namely, thought, discrimination, consideration of consequences, a surveying of the situation, and a weighing of the implications of the question as well as of the results to which it leads.

The author wishes it understood that he sanctions all aspirations which tend to alleviate suffering, in man and in animals, not excluding even the insects and vermin which molest life. He condemns all contrivances which involve unnecessary pain or produce suffering, but, he says, for that reason, he would not demand that we should not resist those creatures that are pestiferous and obnoxious. There is no merit, he continues, in sparing the life either of a tiger or of a louse; but it is a vice to take delight in torturing a wild beast or in prolonging the death-struggle of a fly.

Morality, says Dr. Carus, religiously speaking, consists in doing the will of God, or simply in performing the duties of life—that is to say, in achieving that which, according to the nature of the universe in which we live, raises us higher, renders us nobler, and extends the sphere of our power. Immorality is all that which antagonizes morality, and there can be no question that self-indulgence is the main if not the sole cause of going astray. It should be borne in mind, he continues, that the moral man should never yield without previous deliberation to a sentiment or a passion of any kind, not even to the gentlest or noblest, such as charity, compassion, and love, for the former may be misplaced and the latter may do more harm than good. Guard against yielding to sentiment, he says, for that is self-indulgence and will be productive of good only by haphazard.

The author feels that the antivivisection movement is such a thoughtless yielding to sentiment. It is a noble one, he says, and shows a gentle disposition of the heart, but he doubts whether it is moral, whether it is right, whether it leads mankind upward.

As to vivisection, he says, we all know that it is not a pleasant duty of the physiologist, but it is an indispensable task that must be done for the sake of investigation. It falls within the same category with all sacrifices. Should science neglect to search for light in this most important domain, the domain of life, its representatives would be guilty of a gross neglect of duty. They would be like generals who retreated before the enemy because the enemy's bullets endangered the lives of their soldiers. They would be like an officer in the fire department who, inspired by the idea of not causing pain to anybody, would recall his men from the burning building when they ought to rescue its inmates, because the firemen might blister their hands.

Vivisection may truly have, and frequently will have, he thinks, a tendency to blunt the sentiments of the vivisector; but so does dissection. Shall we, he asks, surrender dissection as an obligatory part of medical instruction lest the moral sense of the student be shocked? Dr. Carus states that there are a few quack schools of medicine in this country which undertake to educate physicians, but their degrees should not be recognized, for they leave their graduates ignorant on one, perhaps on several, most important subjects. It is true enough, he says, that the human body in its wretched nakedness is subjected on the dissection table to most undignified treatment, which is likely to make the student vulgar and rude; but for that reason we can not abandon dissection. The right thing to do is to teach the student the moral aspect of dissection and put him on his guard against the demoralizing influence of the dissection table. Do not cut him off from one of the best sources of information, but so strengthen his moral nerve that he may bear the view of the Medusa without having his heart petrified by the sight of her terribly ugly features.

The antivivisection movement might be excusable, the author continues, if there were any valid arguments to prove that vivisection was useless. But the very opposite is the case. Innumerable discoveries of the most beneficent kind have been made in experiments on animals.

An antivivisectionist writes, the author goes on to say, that he would rather die than purchase the prolongation of his life with the sacrifice of an innocent animal, and he thinks the sentiment seems noble and generous. But, he asks, should we not be ready to kill a million rabbits if we can thereby save the life of one child attacked with diphtheria? The question, he adds, is not that of one child against a million rabbits, but that of many millions of children of all the generations to come against a few hundred rabbits; and not man alone but the whole animal creation, too, is the gainer by every progress of science.

Dr. Carus does not enter into a detailed discussion of the antivivisection movement, but he says that many publications of the antivivisectionists contain gross exaggerations as to the number of the victims of vivisection and the cruelties to which the animals are exposed. The truth is, he says, that all the great men who are famous as clever vivisectors are as considerate as possible and avoid all unnecessary suffering. It is of course not exactly impossible that there are among the minor lights of science men ruthless enough to delight in the cruelty of their work, but it is very improbable. He believes that it is painful to vivisectors to be reminded of the fact that their subject is a living being; but whenever they think of it, they can not help being touched by a sentiment of compassion.

There is a great field, he says, for the humane societies, and they can do a noble work by elevating mankind and refining its sentiments, and also by protecting the dumb creatures against savage masters; but, he adds, when they begin to meddle with science and forbid the physiologist to investigate life in the living animal, it is time to pronounce the *quousque.*

Vivisection, Dr. Carus continues, if kept strictly within the limits of its important purpose, is a moral obligation, and he who would hinder the physiologist in the performance of his duties makes himself guilty of immoral conduct; but any cruelty to animals—namely, every lack of respect for life, every thoughtless or willful infliction of pain, every delight taken in torturing, injuring, or destroying sentient beings—is a crime that should be denounced and reprimanded and, if necessary, checked by the power of law.

"Painful Paralysis of Young Children."—Dr. A. Halipré (*Normandie médicale,* June 1, 1897) employs this term as the title of a case which he himself seems to have come to look upon as one of subluxation of the head of the radius. He was called to see a girl baby, sixteen months old, that had been attacked with "paralysis" of the right arm. The child was healthy, and played with older children, who, on one occasion, handled it rather roughly, for it began to cry. The mother picked it up, thinking it was tired. However, on the following morning it cried again on awakening, and when the child was taken up it was noticed that the right arm hung along the body. When the arm was moved the child gave a sharp cry. Nothing peculiar was observed in the other limbs.

On examining the child, M. Halipré found the arm inert and slightly bent, and passive movements of the arm seemed to cause great pain. There was no swelling or any apparent deformity.

An examination of the articulations soon enabled him to ascertain that the seat of the injury was the elbow. All movements were made without any resistance being perceptible, and they seemed to increase the pain singularly. The condyles of the humerus were intact. The relations of the articular surfaces were then examined, and the movements of pronation and supination caused the child to cry violently. The head of the radius was easily felt, although the child was very fat. But suddenly, while he was executing these movements, a creaking in the articulation was distinctly heard. From this moment the child stopped crying and was able to use the right arm as easily as the left. The creaking was reproduced at different times, although the physician was not able to ascertain its situation exactly.

It is probable, M. Halipré thinks, that the head of the radius was slightly out of place. However, it did not seem to have lost its gross relations; it did not protrude behind, neither was it manifestly prominent in front. Nevertheless, what led the author to think it was at fault was the fact that at the moment when he tried to determine its precise relations the creaking was produced and recovery took place.

The author thinks that, in the presence of a case of this kind, a diagnosis of "painful paralysis of young children" is warranted, and it seems that the term is used by some French writers to cover cases of sudden loss of power in a limb, with pain on passive motion, occurring in young children and subsiding as quickly as it came on. It appears to us, however, that such employment of the word paralysis is unjustifiable and misleading.

The "Scrofulous" Kidney.—In the May number of the *Medical Chronicle* Dr. T. N. Kelynack, of the Manchester Royal Infirmary, gives an analysis of cases of local tuberculosis of the kidney which, he says, brings out certain features of interest that may prove of some value. He states that he has limited the analysis to that local form of renal tuberculosis to which custom allows the convenient term of "scrofulous." From among the records of four thousand five hundred and eighty-four cases he has been able to collect only twenty well-marked examples of "scrofulous" kidney, and a consideration of these records, he says, seems to warrant the following conclusions:

1. Local tuberculosis of the kidney, in the form of the so-called "scrofulous" kidney, is met with in about one half per cent. of all cases submitted to pathological examination in a general hospital. 2. "Scrofulous" kidney is most frequently met with in men. 3. "Scrofulous" kidney is usually met with in adult life, the average age being about thirty-four. 4. Both organs are generally involved; where only one is, there is no noticeable difference in the frequency of the side affected. 5. Considerable variety exists in the size, shape, weight, and general characters of the "scrofulous" kidney. 6. Tuberculous lesions elsewhere in the body are found in ninety per cent. of all fatal cases. The lungs present evidences of either latent or active tuberculosis in seventy per cent. The genital organs or urinary bladder are involved in seventy-five per cent. 7. A thorough examination of the whole body, and especially of the lungs and genito-urinary tracts for tuberculous processes, should be made in every case of suspected "scrofulous" kidney, particularly if the advisability of surgical interference is under consideration.

The Temperature of Milk for Nurslings.—In order to decide the question of the proper temperature of the milk, says a writer in the *Presse médicale* for May 22d, Dr. Smester, with the aid of an ingenious apparatus, was enabled to take the temperature of maternal milk as it came from the breast, and he found that it very nearly resembled that of the external temperature of the body, being from 97° F. to 98.3° F.

This physiological observation, says the writer, has its practical importance, for the physician is enabled to determine the proper temperature of the milk to be given to infants. From 96.6° to 97.4° F. would approach as nearly as possible the physiological temperature of maternal milk; a higher temperature should be especially forbidden; on the contrary, a lower temperature is to be advised, such as 96.4°, 95° F., and even lower still. However, it is sufficient to observe the majority of infants, to note whether they object to taking the milk and seem to find it too hot if it exceeds or only reaches 98.3° F.

A Respiratory Symptom of Tobacco Poisoning.—Dr. William S. Morrow, in the *British Medical Journal* for June 5th, describes a certain peculiarity of breathing met with in cases of tobacco poisoning, and gives an account of its experimental investigation. In his experience it has been a very common symptom of the excessive use of tobacco, and he cites a number of cases in which he has seen it to a marked degree. The only satisfactory description of this symptom, says the author, is that given by Chapman, of Louisville, who described the breathing as irregular, consisting of several short, shallow respirations, followed by one deep and gasping. He counted the respirations, and found them from twenty to twenty-two a minute. Such a change in the breathing, he thinks, is due to some influence affecting either the respiratory centre, the pneumogastric nerve, or the blood, and in order to determine the matter for himself, the author decided to carry out a few experiments, the details of which are given in full, and the results of which are as follows:

In experimental poisoning, as in the clinical cases reported, the inspiratory phase of respiration becomes more pronounced and expiration less.

Tobacco does not produce this characteristic effect through the peripheral endings of the pneumogastric nerves, as its action is practically the same after those nerves have been cut. The same experiment makes it unlikely that it acts through the trunks of these nerves.

Moreover, they seem capable of conducting nerve impulses after death from tobacco, and it would be difficult to explain the diminution which seems to occur in the total volume of air breathed by any action on these nerves.

Dr. Morrow states that he does not deny that the pulmonary branches of the pneumogastrics may be affected in any way. On the contrary, he says, Roy and Graham Brown have shown that nicotine dilates the bronchial tubes, presumably through these nerves, but the characteristic symptom forming the subject of this paper can not be explained by any action of the poison on them.

The poison seems to act principally on the respiratory centre, paralyzing the expiratory division of it, and rendering the whole centre insensitive to afferent nervous impulses. The deep-drawn inspirations seen in his cases may, he thinks, correspond exactly to the deep-drawn inspirations seen in the rabbit and dog in the final stage of poisoning, but from the fact that respiration may be carried on in a feeble way between them, and that they are seen in cases of moderate degrees of poisoning, it seems more likely that they are due to a less severe interference with the sensory side of the centre causing a partial failure of response to the ordinary stimulating influences from above and below. This properly brings into play direct stimulation of the centre by the blood from partial asphyxia, which explains the subjective feeling of lack of air complained of in one of the cases referred to.

Dr. Morrow concludes that a fairly common symptom of tobacco poisoning is a deep gasping inspiration occurring at intervals, and sometimes quite audible. This may be practically the only symptom complained of. It is probably due to a paralyzing action of the drug on the respiratory centre, affecting especially the expiratory division, but also diminishing the irritability of the whole centre to afferent impulses. This symptom may persist from a few days to some months after the poison is discontinued.

The Treatment of Ileo-cæcal Intussusception.—In the June number of the *Edinburgh Medical Journal* Mr. D'Arcy Power considers several points in the causation and treatment of the commoner forms of intussusception, especially as they occur in children. The treatment, he says, resolves itself into methods adapted for the relief of simple invagination and of strangulated intussusception.

Simple invaginations, he goes on to say, are best treated by irrigation. The fluid should be allowed to remain for ten minutes before it is run off, the surgeon keeping one hand upon the abdomen during the whole operation. Rupture of the colon is the accident most likely to happen if this method is adopted in unsuitable cases, if too large a quantity of liquid is used, or if too great a pressure is employed. This method should be applied as soon as possible after the diagnosis has been made, but it is not likely to be successful when forty-eight hours have elapsed from the onset of the symptoms, except in those cases which are going to run a chronic course. Abundant hæmorrhage seems to contraindicate any attempt to reduce an intussusception by irrigation, for the structure of the intestine is then much injured by the infusion of blood. Absence of hæmorrhage, on the other hand, associated with severe collapse, also equally contraindicates the treatment of an intussusception by irrigation, for it points to the early occurrence of gangrene.

When irrigation has failed, continues the author, or when it is considered inadvisable to adopt this method, abdominal section should be performed at once. Every care should be taken to prevent shock, and in a child the causes of shock are chilling of the body, bleeding, and prolonged manipulation of the intestine. The abdominal incision should be made in the middle line, and it should only be long enough to admit two fingers and a thumb, for the intussusception should be reduced, if possible, without exposure of the intestines. It is better to enlarge the abdominal wound, if there is any difficulty in reducing the intussusception, rather than to run any risk of tearing the intestine by working in too cramped a space. It is unnecessary to wash out the abdominal cavity in the simpler cases where reduction has been easily brought about by squeezing the tumor gently from below upward; but in every case the surgeon ought to satisfy himself, before he closes the abdomen, that he has overcome the only cause of intestinal obstruction, for intussusceptions are sometimes complicated by a variety of troublesome and dangerous conditions, such as volvuli and bands of adhesion.

It has been assumed so far, Mr. Powers states, that the intussusception is reducible, but it happens only too frequently that this is not the case, for when the abdomen is opened the intestine is found to be so adherent, so strangulated, or so gangrenous, that it is impossible to reduce it. When the surgeon has opened the abdomen and finds that the intussusception is greatly congested and has lost its gloss, he must not, however, at once assume that it is dead. The best thing to do in such a case is to wrap a layer or two of gauze round the injured bowel as soon as the invagination has been reduced. One end of the gauze is left hanging out of the abdominal wound, the intestine is laid inside the peritoneal cavity, and the incision is closed lightly with temporary sutures. If the bowel ruptures, the intestinal contents may then find their way out of the abdominal cavity, while, if it recovers, the gauze can be removed and the wound will heal by granulations.

A part of the invaginated bowel may be removed when the intussusception is short, when the adhesions are limited to the neck of the sac, and when the intussusception is irreducible, from such mechanical causes as swelling of the end of the intussusceptum, or from the presence of a polypoid tumor. This is best done, he says, by means of the operation suggested by Mr. Barker, which has since been modified by Mr. Bowreman Jessett and by Professor Greig Smith. It consists essentially in the insertion of a continuous suture at the neck of the tumor, to insure the union of the two layers of intestine. The intussuscipiens is then slit open, and so much of the intussusceptum is removed as lies dead or free within the sheath. The bleeding is stopped, the wound in the intussuscipiens is sewed up, and the abdomen is closed. But such a measure is useless when the intussusception is long and the two serous surfaces are united in its whole extent. In these cases an artificial anus must be made, or a lateral anastomosis must be established between the two portions of the intestine which lie above and below the tumor.

Palliative measures, continues Mr. Powers, are useless when the neck of the intussusception is ulcerated, when the intussuscipiens is gangrenous, and when the invagination is associated with circumscribed malignant disease of the intestine. The affected portion of the bowel must be cut away boldly in these cases, and the two ends of the intestine must afterward be joined, either directly by means of a button or bobbin, or by Maunsell's operation. Maunsell's operation of invagination, internal suture, and disinvagination is particularly well adapted for enterectomy associated with intussuception, for these operations are necessarily required at a moment's notice, so that they have to be done without skilled assistance, and often by those who have not a large experience in abdominal surgery. No apparatus is needed in Maunsell's operation, the sutures are carried through the whole thickness of the walls of both pieces of the bowel, so that even an operator with an unsteady hand working with an imperfect light has but little to fear, and the after results are admirable. This method, too, is especially useful when the ileum and the colon, or two pieces of colon, have to be united. The appendices epiploicæ in these cases may prevent the two portions of intestine lying in perfect apposition if a button has been employed, and thus the all-important primary union is less likely to take place. When Maunsell's method is employed, great care must be taken to suture securely the mesenteric borders of the intestine, for the bleeding and the increased thickness of the tissues at this part are apt to deceive the surgeon, so that he is likely to pass his needle through only one piece of the bowel. Leakage then takes place, and the patient dies.

It is to be hoped, says the author, that as time progresses enterectomy will be needed less often. The practitioner still places too much reliance upon the efficacy of drugs and rest in the treatment of intussusception, for he still has a lingering hope that the patient will recover when a portion of the bowel has been eliminated after a process of digestion or sloughing within the body. The surgeon is therefore rarely called in until much valuable time has been lost, and the bowel has become so injured that a simple operation is useless. It ought to be clearly understood that an intussusception must be treated upon exactly the same lines as a hernia, that irrigation is the equivalent of taxis, and that if irrigation fails to relieve the condition the abdomen must be opened at once. The surgeon must then make up his mind as quickly as possible what he is going to do, for the shorter the operation the more likely it is that the patient will recover.

Renal Suppuration.—In a paper read by Dr. Thomas H. Manley, of New York, at the recent meeting of the American Medical Association, the author said that during the past two years several cases of renal lesions had come under his notice, of a class by no means uncommon nor in his experience, until very recently, studied with that care which their importance merited. Much confusion and disorder yet remained in our views on the pathology, diagnosis, and treatment of purulent kidney. Among the local causes of renal suppuration were lithiasis (calculous impaction) and contusion or laceration. Among the consecutive, or constitutional, causes were infection (presumably by way of the circulation), tubercle, ascending infection (vesical), and contiguous infection, from the colon, etc.

One striking clinical feature about a large renal abscess was that it rarely involved more than one side, and that the right; and in its incipient stages was painless, unless the purulent *foyer* had opened into the urinary stream.

In the male subject, nephropyosis was often dependent on calculous prostatic or urethral obstruction in about one third of the cases, according to Dickinson. Another third would depend on renal concretions, and probably the last third on the infections. Gonorrhœal pyelonephrosis was yet doubted, and in all instances it was difficult to detect the tuberculous bacilli. Cystitis was almost a constant symptom in all chronic cases of suppurative kidney when the urine had undergone ammoniacal decomposition.

A microscopical examination of the sediment in pyuria, by an experienced person, would quite universally decide the source of the pus, whether it was urethral, prostatic, vesical, ureteral, or renal. It was necessary, however, that the microscopist should have had a special training in this line of analysis. It was of the greatest importance in all cases that the urine be secured fresh and that several specimens be examined for several days before a definite opinion was expressed. The site of the lesion was decided in all cases by the presence of characteristic epithelia, which were invariably present, though in certain stages of renal suppuration they were so disintegrated or transformed as to defy detection; but after an interval of a day or two abundant epithelial casts and cells were readily seen. It was imperative under all circumstances, so far as possible, to eliminate sources of error in the microscopical analysis of the sediment; hence, in women we must exclude uterine, cervical, and vaginal suppuration by inspection. In men we might exclude the urethral source of pus by catheterizing the bladder.

The exploratory incision as a means of diagnosis alone, in cases of renal lesion, could be mentioned only to be condemned, unless an operation for cure or relief immediately followed. The general impression that purulent kidney was a surgical lesion under all circumstances was unwarranted, as this pathological state was largely influenced by hygienic and internal therapeutic means. But when internal remedies failed we were enabled to proceed intelligently and directly with operative surgery.

The Phenomena of Mescal Intoxication.—Mescal buttons, says Mr. Havelock Ellis in the *Lancet* for June 5th, are eaten by the Kiowa and other Indians of New Mexico in connection with religious ceremonies. Recently the extraordinary vision-producing properties of this substance have been investigated in America by Prentiss and Morgan, and more especially by Weir Mitchell, who has published a very interesting record of the marvelous color visions by which he was visited when under the influence of mescal. There seems, however, to be at present no record of any experiment in the use of mescal in the production of visual phenomena carried out on the European side of the Atlantic. The phenomena are certainly of much interest he thinks—perhaps even more so to the psychologist than to the physician, notwithstanding remarkable results recorded in the treatment of neurasthenia, etc., and for this reason he gives the following account of his personal experience with mescal:

"On Good Friday, being entirely alone in quiet London rooms, I made an infusion of three buttons (a full dose) and took it in three portions at intervals of an hour between 2.30 and 4.30 P. M. The first noteworthy result (and the only one of therapeutic interest which I have to record) was that a headache which had been present for some hours and showed a tendency to aggravation was immediately relieved and speedily dissipated. There was slight drowsiness before the third dose was taken, but this speedily passed off and gave place to a certain consciousness of unusual energy and intellectual power, which also quickly passed off, and was not marked and prolonged, as with Dr. Weir Mitchell. So far no visual phenomena had appeared, even when the eyes were closed for several minutes, and there was yet no marked increase of knee-jerk; there was, however, a certain heightening of muscular irritability, such as may be noted when one has been without sleep for an unusual period. The pulse also began to fall. After the third dose I was still feeling on the whole better than before I began the experiment. But at 5 P. M. I felt slightly faint, and it became difficult to concentrate my attention in reading; I lay down and found that the pulse had now fallen to 48, but no visual phenomena had yet appeared. At 6 P. M. I noticed while lying down (in which position I was able to read) that a pale violet shadow floated over the page. I had already noted that objects which were not in the direct line of vision showed a tendency to be heightened in color and to appear enlarged and obtrusive, while after-images began to be marked and persistent.

At 6 P. M. there was a slight feeling of faintness as well as of nausea, and the first symptoms of muscular incoordination began to appear, but there was no marked discomfort. By 7 P. M. visions had begun to appear with closed eyelids, a vague confused mass of kaleidoscopic character. The visual phenomena seen with open eyes now also became more marked, and in addition to the very distinct violet shadows there were faint green shadows. Perhaps the most pleasant moment in the experience occurred at 7.30 P. M., when for the first time the color visions with closed eyes became vivid and distinct, while at the same time I had an olfactory hallucination, the air seeming filled with vague perfume. Meanwhile the pulse had been rising, and by 8.30 P. M. had reached its normal level (72 in the sitting posture). At the same time muscular incoordination had so far advanced that it was almost impossible to manipulate a pen, and I had to write with a pencil; this also I could soon only use for a few minutes at a time, and as I wrote a golden tone now lay over the paper, and the pencil seemed to write in gold, while my hand, seen in indirect vision as I wrote, looked bronzed, scaled, and flushed with red. Except for slight nausea I continued to feel well, and there was no loss of mental coolness or alertness. When gazing at the visions with closed eyes I occasionally experienced slight right frontal headache, but as I only noticed it at these times I attribute this mainly to the concentration of visual attention. In one very important particular my experience differs from Dr. Weir Mitchell's. He was unable to see the visions with open eyes even in the darkest room. I found it perfectly easy to see them with open eyes in a dark room, though they were less brilliant than when the eyes were closed. At 10 P. M., finding that movement distinctly aggravated the nausea and faintness, I went to bed, and as I undressed was impressed by the bronzed and pigmented appearance of my limbs.

"In bed the nausea entirely disappeared, not to reappear, the only discomfort that remained being the sensation of thoracic oppression, and the occasional involuntary sighing, evidently due to shallow respiration, which had appeared about the same time as the vision began. But there was not the slightest drowsiness. This insomnia seemed to be connected less with the constantly shifting visions, which were always beautiful and agreeable, than with the vague alarm caused by thoracic oppression, and more especially with the auditory hyperæsthesia. I was uncomfortably receptive to sounds of every kind, and whenever I seemed to be nearly falling asleep I was invariably startled either by the exaggerated reverberation of some distant street noise (though the neighborhood was even quieter than usual), or, again, by the mental image (not hallucination) of a loud sound, or, again, as I was sometimes inclined to think, by actual faint hallucinatory sounds; this, however, was difficult to verify. At a later stage there was some ringing in the ear. There was slight twitching of the larger muscles of the legs, etc., and before going to bed I had ascertained that the knee-jerk was much exaggerated. The skin was hot and dry. The visions continued. After some hours, tired of watching them, I lighted the gas. Then I found myself in a position to watch a new series of vivid phenomena to which the previous investigators had not alluded. The gas—*i. e.*, an ordinary flickering burner—seemed to burn with great brilliance, sending out waves of light which extended and contracted rhythmically in an enormously exaggerated manner. What chiefly impressed me, however, were the shadows which came in all directions, heightened by flushes of red, green, and especially violet. The whole room then became vivid and beautiful, and the tone and texture of the whitewashed but not remarkably white ceiling was immensely improved. The difference between the room as I then saw it and its usual appearance was precisely the difference one may often observe between the picture of a room and the actual room. The shadows I saw were the shadows which the artist puts in, but which are not visible under normal conditions of casual inspection. The violet shadows especially reminded me of Monet's paintings, and as I gazed at them it occurred to me that mescal doubtless reproduces the same condition of visual hyperæsthesia, or rather exhaustion, which is certainly produced in the artist by prolonged visual attention (although this point has yet received no attention from psychologists). It seems probable that these predominantly violet shadows are to some extent conditioned by the dilatation of the pupils, which, as the American observers had already noted, always occurs in mescal intoxication. I may remark in this connection that violet vision has been noted after eye operations; and Dobrowolsky has argued that a necessary condition for such vision is the dilatation of the pupils produced by atropine, so that the color vision (chiefly violet, though to some extent of other colors) is really of the nature of an after-image due to bright light. Dobrowolsky's explanation seems to fit in accurately with my experiences under mescal.

"I wished to ascertain how the subdued and steady electric light would influence vision and passed into the next room. Here the richly colored shadows, evidently due to the stimulus of the flickering light, were not obtrusive; but I was able to observe that whatever I gazed at showed a tendency to wave or pulsate. The curtains waved to a marked extent. On close inspection I detected a slight amount of real movement, which doubtless increased the coarser imaginary movement; this latter showed a tendency to spread to the walls. At the same time the matting on the floor showed a very rich texture, thick and felted, and seemed to rise in little waves. These effects were clearly produced by the play of heightened shadows on the outskirts of the visual field. At 3.30 A. M. I found that the phenomena were distinctly decreasing, and soon fell asleep. Sleep was apparently peaceful and dreamless, and I rose at the usual hour without any sense of fatigue, although there was a slight headache. A few of the faint visual phenomena with which the experience had commenced still persisted for a few hours."

Mr. Ellis states that motor incoordination and the thoracic symptoms of cardiac and respiratory depression were the only really unpleasant symptoms of the experiment. He thinks that the pleasure of mescal intoxication does not lie in any resultant passive emotional state, such as is produced by tea or alcohol, but strictly in the enjoyment of the color visions produced. Attention, he says, is impaired, but intellectual judgment remains unimpaired. The visions seemed to him as beautiful in memory as when he experienced them. The sensory phenomena seemed to be due to great and general disintegration and exhaustion of the sensory apparatus. Mr. Ellis is convinced that all the senses were more or less affected. There were vague dermal sensations, and the body felt unfamiliar to the touch, just as everything seemed delightfully unfamiliar to the sense of vision. He noticed also that any marked casual stimulation of the skin produced other sensory phenomena—a heightening of the visions or an impression of sound. This is a phenomenon, he says, which may throw an interesting light on the synæsthesiæ, or "secondary sensations."

The Use and Abuse of Ergot in Obstetrics.—Dr. T. More Madden, of Dublin, obstetric physician and gynæcologist to the Mater Misericordiæ Hospital, has kindly furnished us with an abstract of a paper with this title read by him before the Obstetric Section of the Royal Academy of Medicine in Ireland on April 24th.

The reaction against the former abuse of ergot in obstetrics, he says, has now apparently been carried to an extreme and undue extent, and has led to its disuse in many instances in which it might be employed most advantageously. He therefore submits some observations with regard to the circumstances under which long clinical experience has convinced him that ergot, or its preparations, may and should be given in midwifery practice, and the methods of its administration, together with a summary of the results to mother and child in one hundred and fifty of the instances in which, in his practice, this drug has thus been resorted to.

Circumstances under which Ergot may be Employed in Midwifery Practice.—Judging from the recent literature of this subject, says Dr. Madden, it may not be superfluous to premise that to use ergot or any of its preparations safely and effectively during parturition the presentation should, as a rule, be cranial; that there should be no disproportion between the fœtus and the maternal parts or any obstacle to delivery in the genital tract; that the os uteri, if not previously fully dilated, should at least be sufficiently dilatable to allow of speedy delivery with the forceps whenever that may become necessary; and that a preparation of ergot should be selected and a dose given calculated to produce the required ecbolic effect.

Under such conditions ergot may be given with utility when required either before, during, or after the second stage of labor—viz.: First, in some instances (*a*) of delay from inertia of the uterus before the full dilatation of a dilatable os in which there is any evident danger to either mother or child from protraction of labor; secondly, it may be administered during the second stage (*b*) in nearly every case of long delay from inertia wherein the presentation is natural and the delivery not otherwise impeded, or in which (*c*) there is then either reason to apprehend the probability of subsequent hæmorrhage or any such complication as may call for its use; thirdly, during the last stage of labor this ecbolic may be employed (*d*) to hasten the expulsion of the placenta when delayed by inertia, or (*e*) for the arrest of hæmorrhage; fourthly, after labor ergot may be resorted to either immediately (*f*), to prevent or check flooding, or subsequently (*g*) to produce such tonic or permanent contraction as will effectually seal up the uterine vessels and so lessen the liability to subsequent septic invasion, or (*h*) to effect the expulsion of clots and so arrest after-pains; fifthly, and lastly (*i*), to stimulate such contraction as may quicken or secure the process of involution after parturition.

Method of Employing Ergot.—In such cases this ecbolic, if given at all, and whether ergot, ergotine, ergole, or any other of its preparations is selected, should be employed not in the repeated small and utterly insufficient quantities that have been recommended by some modern writers, but should be administered only once during labor, and then in such a bold, full, and effective dose as may be likely to excite speedy and permanent or tonic uterine contractibility. With this view, in his own practice he therefore generally uses the fresh liquid extract of ergot of the *British Pharmacopœia*, of which he commonly gives two drachms, or in some cases three drachms, by the mouth, together with a drachm by deep hypodermic injection in the gluteal region at the same time.

Abstract of One Hundred and Fifty Obstetric Cases in which Ergot was Employed.—In seventy of these cases the patients were primiparæ; in eighty they were multiparæ. In one hundred and forty-eight instances the result was favorable to the mother. In ninety-five of the cases referred to the drug was given before the birth of the child—viz., in fifteen for delay from inertia in the first stage of labor, the os being previously dilatable and the head presenting; and in eighty either for delay similarly occasioned in the second stage, or else then for the prevention of hæmorrhage or for other complications. In ninety-two of these instances the children were born alive, either expelled by uterine action or extracted with the forceps. Of the ninety-five cases in which ergot was given before the birth of the child, in eighty-six the placenta was normally expelled, and in nine its removal had to be assisted for morbid adhesions or other causes, one only of which was a case of hour-glass contraction. In fifty-five cases the ergot was given after the birth of the child—viz., in twenty-five during the third stage to hasten the expulsion of the placenta or to prevent hæmorrhage; and in thirty after delivery, for the arrest of post-partum flooding, or for some other reasons to stimulate and secure tonic contraction of the uterus.

His experience on this subject, some of the results of which he has summarized, points to the conclusion that the dangers which are now so commonly ascribed to the use of ergot in obstetrics are probably largely attributable to its misuse or administration in unsuitable cases or in insufficient doses, and therefore furnish no argument whatever against its judicious and proper employment.

Pain and its Treatment with Lactophenine.—Dr. S. V. Clevenger (*Journal of the American Medical Association*, 1897, No. 5; *American Journal of the Medical Sciences*, May, 1897), after pointing out the disadvantages of various analgetic drugs, states that lactophenine is destined to supersede largely the entire array of analgetics proper, owing to its non-toxic peculiarities and the feeling of comfort described by many physicians as following its use. It affords the best results with the least ill effects. Its range of incompatibility is less than that of other synthetic compounds, and it may be combined with caffeine, quinine, and salicylic acid. The minimum dose of from five to ten grains may be increased until a daily maximum of forty-five grains has been reached. It is but slightly soluble in water, although acting promptly, so that it can be given dry and be washed down with a drink of water. A dose of fifteen grains usually acts as a feeble hypnotic. There are no untoward symptoms following its use, and, contrary to the experience with some synthetic drugs, the pulse becomes fuller and stronger under its use. The range of application is extensive, and the testimony of the author is in corroboration of the findings of other physicians as to its superior analgetic effects, its safety, and its promptness of action.

The Harlem Medical Association.—On June 2d officers for the ensuing year were elected as follows: President, Dr. Philip Arthur Malleson; vice-president, Dr. Henry Walton Mooney; secretary, Dr. Joseph Edward Lumbard; treasurer, Dr. Charles A. Clinton; trustees, Dr. H. J. Wolf, Dr. S. E. Gibbs, and Dr. David Franklin.

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